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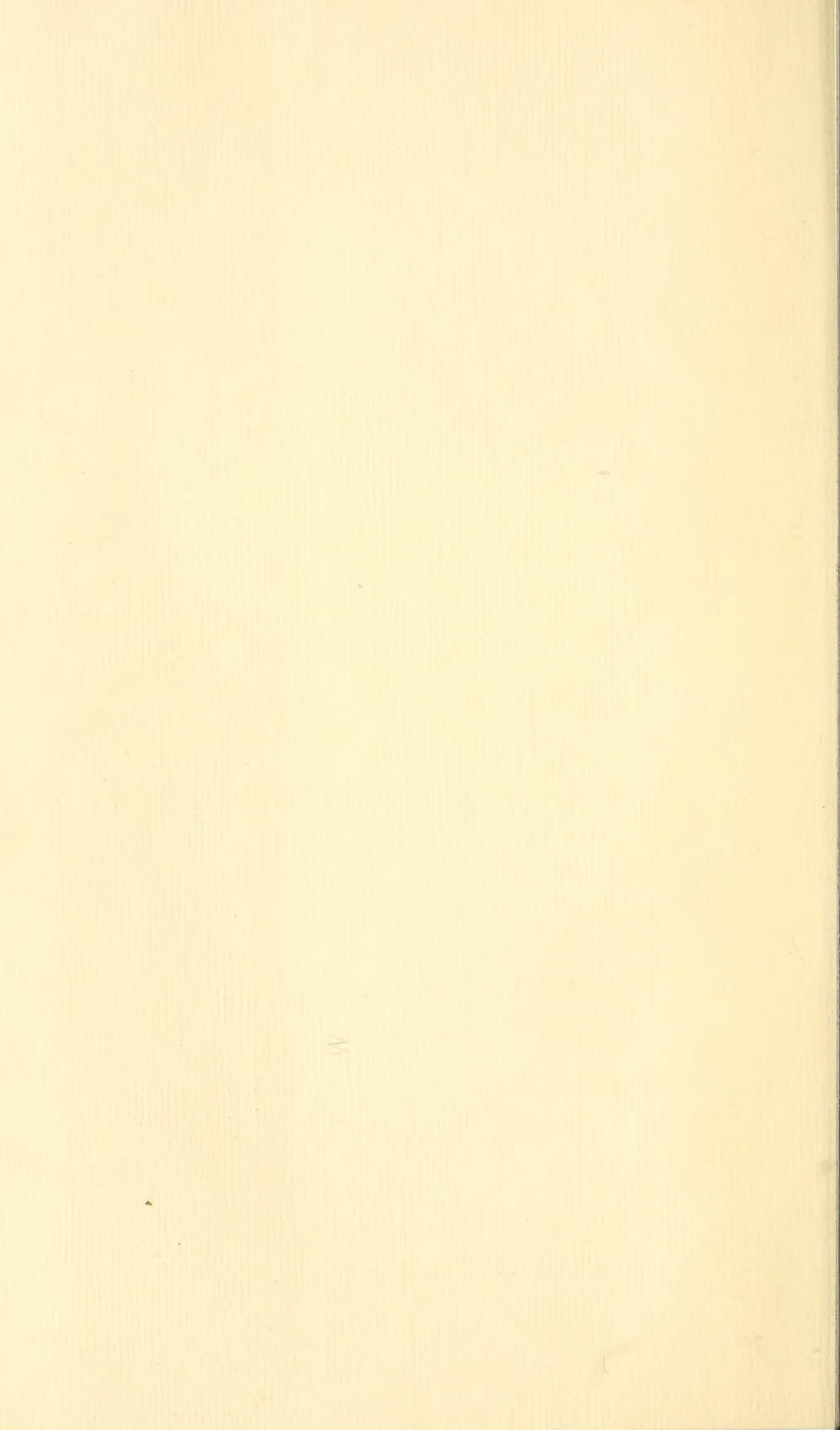


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biennial report  
north carolina  
department of agriculture  
1970-1972







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department of agriculture  
1970-1972

james a. graham, commissioner  
john l. reitzel, deputy  
f. carlyle teague, editor

raleigh, n. c.

## TABLE OF CONTENTS

Board of Agriculture .....	3
Letter of Transmittal .....	4
General Administration .....	7
Board Meeting Highlights .....	10
Personnel .....	18
Publications Division .....	19
Credit Union Division .....	21
Office of Fiscal Management and Administrative Services ...	25
Personnel .....	26
Accounts .....	27
Farmers Market .....	39
The State Fair .....	42
Office of Agribusiness and Public Services .....	45
Personnel .....	46
Food Distribution Division .....	51
Markets Division .....	60
Museum of Natural History .....	91
Research Stations Division .....	100
Soil Testing Division .....	116
Statistics Division .....	120
State Warehouse Fund .....	124
Office of Consumer Services .....	127
Personnel .....	128
Chemistry Division .....	137
Dairy Division .....	158
Entomology Division .....	162
Seed Testing Division .....	175
Structural Pest Control Division .....	179
Veterinary Division .....	184
Weights and Measures Division .....	196
Gasoline and Oil Inspection Division .....	197



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# NORTH CAROLINA BOARD OF AGRICULTURE

June 30, 1972

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*Ex-Officio Chairman*

F. CARLYLE TEAGUE, *Secretary*



Atwell Alexander  
*Stony Point*



James L. Sutherland  
*Laurinburg*



Fred N. Colvard  
*Jefferson*



Guy E. Fisher  
*Pendleton*



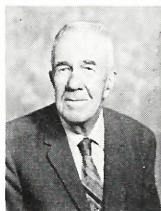
Claude T. Hall  
*Roxboro*



George P. Kittrell  
*Corapeake*



Charles F. Phillips  
*Thomasville*



J. Hawley Poole  
*West End*



Henry Gray Shelton  
*Speed*



David Townsend, Jr.  
*Rowland*

5006002



State of North Carolina  
Department of Agriculture  
Raleigh

LETTER OF TRANSMITTAL

November 15, 1972

To his Excellency  
ROBERT SCOTT, Governor  
Raleigh, North Carolina

Dear Governor Scott:

In compliance with Article III, Section 7 of the Constitution, I herewith submit the report of the Commissioner of Agriculture for the biennium 1970-1972.

Respectfully yours,  
JAMES A. GRAHAM  
Commissioner



JAMES A. GRAHAM

*Commissioner of Agriculture*





JOHN L. REITZEL

*Deputy Commissioner of Agriculture*



# BIENNIAL REPORT

OF THE

## NORTH CAROLINA DEPARTMENT OF AGRICULTURE

By JAMES A. GRAHAM

*Commissioner of Agriculture*

The 1970-72 biennium has been a busy and important one for the North Carolina Department of Agriculture.

In addition to the agricultural and consumer services programs which have been carried out by the department for many years, other new fields were entered.

Among the most important was the passage of the pesticide use law in 1971. This important legislation is a complement to the registration laws administered in the past by the Analytical Division.

Under the new pesticide board, the department has broad responsibility to control the use of pesticides in the state. The work of this area is just beginning to move and will be very important in the future.

The public has become increasingly aware of the activity of the department in consumer services areas and as they do, the requirements have increased. This is to the advantage of the public and the effectiveness of the programs.

It is the fond hope of the department that its activity can gear itself to meet the changing needs of the state and constantly strive to do the kind of job needed in all areas of responsibility.

As has been the case in much of state government, the NCDA has shifted personnel and positions to best get the job done.

In the process of this reorganization, the 1971 General Assembly found that the administration of state chartered credit unions could be best handled under the new Department of Commerce.

The Credit Union Division has operated as a part of the NCDA since its conception in the early 1900's. Legislation originally introduced by John Sprunt Hill was designed to provide farmers with reasonable financing. Today, however, credit unions are in far greater use by non-farmers.

Added to the department's responsibilities is the North Carolina Rural Rehabilitation Corporation. This organization finances rural undertakings and enterprises through low interest loans. It will be administered by the controller through the Office of Fiscal Management.

Internal reorganization was implemented in the spring of 1972. Effective July 1, 1972 three new offices were established which will oversee the duties of similar divisions. The Office of Agri-Business and Public Service headed by an assistant commissioner administers the Divisions of Food Distribution, Markets, Museum, Research Stations, Soil Testing, Statistics and Warehouse. The Office of Fiscal Management headed by the controller administers the Divisions of Administrative Services, Farmers Market, Rural Rehabilitation Corporation and the State Fair. The Office of Consumer Services headed by an assistant commissioner administers the Divisions of Analytical Chemistry, Dairy, Entomology, Seed Testing, Structural Pest Control, Veterinary and Weights and Measures.

The two assistant commissioners and the controller report to the deputy commissioner who in turn reports to the Commissioner of Agriculture.

This was followed in June, 1972 with a complete reorganization of the Markets Division.

#### PERSONNEL CHANGES

Several important personnel changes were affected during the biennium.

Dr. James A. Bell, DVM was named State Supervisor of Meat and Poultry Inspection following the resignation of Dr. R. R. Miller, DVM. Dr. Bell had served as assistant supervisor since April 1969.

Following the retirement of the late Cecil D. Thomas, Pat H. Kelley was appointed Director of Research Stations. Kelley joined the department in 1968.

W. V. Didawick retired as director of the Credit Union Division after sixteen years of service. Joseph M. Jones, an eleven year veteran with the division, succeeded him.

#### AGRICULTURAL HALL OF FAME

The Agricultural Hall of Fame was dedicated February 23, 1967. This is an enshrinement honoring those who made outstanding contributions to North Carolina agriculture during their lifetimes.

On March 5, 1971 Alonzo Clay Edwards was enshrined. The ceremony was held in the Hall of Fame Room located in the Agriculture Building.

Edwards was a farmer and was instrumental in formulating and steering numerous agricultural organizations to success. Some of the more noteworthy were the Farm Bureau, Tobacco Associates, the FCX, the 4-H Development Fund and the ASCS.

#### COMMISSIONER OF AGRICULTURE'S 4-H AWARD

The special award which was announced last biennium by Commissioner Graham, the Agriculture Commissioner's 4-H Award was continued.

The large impressive trophy is presented annually to the most outstanding 4-H club boy in North Carolina.

The presentation was made during the State 4-H Club Congress in July 1971 to Ronnie Armstrong of Tyrrell County. The recipient in 1972 was David Palmer of Haywood County. Their names were engraved on the large trophy and each received a small replica to keep permanently.

#### STATE BOARD OF AGRICULTURE

The Board of Agriculture is the regulatory and policy making body of the Department of Agriculture. Its membership currently, and by long tradition, represents the finest kind of intelligent agricultural leadership and dedicated public service.

The Board consists of ten members appointed by the Governor for six-year terms of office. However, the law provides for staggered terms, so that not all expire at one time, and requires that the members shall be active farmers representing the major sections and types of agriculture in the state.

The multiplying problems of progress place commensurately heavier burdens upon this Board. Regulatory provisions on which they must pass increase in complexity and in number. The Board members are all busy farmers and businessmen, active in many civic affairs at community and state levels. Except for a nominal pay for days actually in session or traveling on business for the Board, their only compensation is the knowledge that they are serving their state and their nation. Yet they give without stint of their time and talents to the business of the Board not only in formal sessions but in travel and other activities to further the interests of the Department and North Carolina Agriculture.

During this biennium, the Board has spent 13 days in full sessions. For many of the members this means from one and one-half to two days away from their farms and businesses; and a number of meetings have necessarily had to be held during their



busiest season. In addition, members have had to spend time on special committees appointed to work out details of transactions to present recommendations to the full Board.

The following summary of matters brought before the Board during the biennium gives some idea of the multitude and variety of decisions which must be made by the Board of Agriculture. This brief outline can give no real indication of how knotty and time consuming are many of the matters on which they must act.

### HIGHLIGHTS OF BOARD MEETINGS 1970-1972 Biennium

October 15, 1970

*J. Atwell Alexander, G. E. Fisher, Claude T. Hall, George P. Kittrell, Charles E. Phillips, Henry Gray Shelton, James L. Sutherland, David Townsend, Jr.*

Approved changes in seed corn regulations for 1971 sale to provide that cytoplasm, identity must be shown on the label as a precaution against Race "T," Southern Corn Blight.

Approved the 1969-70 NCDA audit.

Approved one year lease of six units at State Farmers Market to Mac's Produce for \$900.

Recommended to Council of State that 200 ft. right-of-way on Piedmont Research Station be granted to Duke Power Company. State will receive \$8,079 from easement.

Recommended to Council of State that easement be granted to Highway Commission on the Peanut Belt Research Station for \$3,100.

Recommended purchase 25 acres adjacent to Rocky Mount Research Station presently leased to John L. Wiggins on condition Wiggins some day sells his farm. Action was taken subject to approval Attorney General, Property Control Division and Council of State.

Approved referendum to be held December 4, 1970 for promotional purposes by N.C. Apple Grower's Association, Inc.

November 9, 1970

*J. Atwell Alexander, Claude T. Hall, Guy E. Fisher, George P. Kittrell, Charles E. Phillips, J. H. Poole, Henry Gray Shelton, James L. Sutherland, David Townsend, Jr., Fred N. Colvard.*

In public hearing, suspended for one year registration of all economic poisons manufactured by Sudbury Laboratories, Inc., Sudbury, Mass. due to company's failure to properly register their products according to North Carolina law.

Amended regulations governing Beverage, Beverage Materials and Bottling Plants to require use of 1/10 of 1 percent, sodium benzoate as preservative, provided its presence and function is shown on the label.



Heard reports on and discussed continued use of the pesticide parathion. Urged voluntary limitation of parathion mixtures with other pesticides.

Amended regulations of the Vegetable Plant Law so that proper people might be held responsible for substandard or mislabeled vegetable plants, as to variety.

Approved a three year lease of four units at the State Farmers Market to Dixon Tom-A-Toe Co. of Raleigh. Rent \$450 a month.

Held public hearing to consider amending regulations to allow number four cucumbers. The proposal was defeated.

Voted to allow N.C. State Fair Manager Art Pitzer to continue, at his discretion, to handle the fair and rental fees. He was instructed to consult the legal staff and personnel to update system of charges for rental of facilities.

Board voted to suspend automobile racing at the State Fairgrounds.

#### February 15, 1971

*J. Atwell Alexander, G. E. Fisher, Claude T. Hall, George P. Kittrell, Charles F. Phillips, Henry Gray Shelton, James L. Sutherland, David Townsend, Jr.*

Authorized the Commissioner of Agriculture and the State Warehouse Superintendent, with the advice of the Attorney General's office, the State Auditor and others, to take feasible steps to implement the requirements of the insurance company and suggestions of the State Auditor pertaining to Southeastern Farmers Grain Storage Association in Warsaw.

Adopted Federal Regulations as regulations of the N.C. Meat Inspection Service.

Requested the N.C. General Assembly amend the state's meat inspection laws to remove the \$2000 exemption.

Amended the quarantined areas for fire ant, witchweed, soybean cyst nematode and white-fringe beetle.

Amended fertilizer rules and regulations to allow the sale of the following bag weights of fertilizer: 200 lbs., 167 lbs., 125 lbs., 100 lbs., 80 lbs., and manufacturers choice under 80 lbs.

Amended Chapter XXII, Section 22-35 of the N.C. Feed Rules and Regulations to allow non-protein nitrogen in feed for cattle, sheep and goats as an acceptable source.

Amended Chapter XXII, Section 22-4 of the N.C. Feed Rules and Regulations concerning labeling of complete Dairy Feed or Complete Dairy Ration.

Upon recommendation of Eugene White of the Property Control Section, the Board reduced to cost to Duke Power Company for an easement on the Piedmont Research Station from \$8,079 to \$5,600.

Accepted a bid of \$2,740 by E. Leland English, Jr. to rent the Willard Research Station for the crop year 1971.

Instructed N.C. State Fair Manager Art Pitzer and Joe Murnick, representative of ELCAR to investigate costs and possibilities of repairs to the fair-ground race track for the purpose of holding NASCAR sanctioned auto racing.

Endorsed proposed legislation to lengthen permits for wide equipment on public roads from six months to one year.

#### March 29, 1971

*J. Atwell Alexander, G. E. Fisher, Claude T. Hall, George P. Kittrell, Charles F. Phillips, J. Hawley Poole, Henry Gray Shelton, James L. Southerland.*

Heard report on hog cholera situation and proposed legislation to be introduced to the 1971 General Assembly by Dr. T. F. Zweigart, state veterinarian.

Following a public hearing, amended seed law to allow sale of soybean seeds for one year that germinate between 60 and 69 percent provided they are properly labeled.

Endorsed proposed legislation to be presented to the 1971 General Assembly: To limit N.C. Handlers Act to fruits and vegetables. To change potato law making it unlawful to plant seed potatoes which do not meet standards for certified or U.S. No. 1. Also endorsed proposed legislation to close several loop holes in seed law.

Following a report by Mr. Joe Murnick of ELCAR, Board voted that no auto racing be held at State Fairgrounds this year.

Passed a resolution requesting the governor to leave the Credit Union Division in the NCDA.

#### May 26, 1971

*G. E. Fisher, G. P. Kittrell, J. H. Poole, H. G. Shelton, J. L. Sutherland, D. Townsend, Jr.*

Discussed current situation pertaining to the Farmers Grain Elevator in Warsaw.

Unanimously voted to pay a claim with 6 percent interest against the Farmers Grain Elevator in Warsaw and the State Warehouse System to A. C. Lockamy.

Voted to empower subcommittee of the N.C. Board of Agriculture, assigned to the Warehouse System, to act for the Board on additional claims against the Warehouse System.

#### June 21, 1971

*J. Atwell Alexander, G. E. Fisher, Claude T. Hall, George P. Kittrell, Charles F. Phillips, J. Hawley Poole, Henry Gray Shelton, James L. Sutherland, David Townsend, Jr.*

Voted to enter into a cooperative agreement with the USDA, Agricultural Research Plant Protection Division which provide for the protection of crops against insects and disease.

Held public hearing to amend North Carolina's quarantine area for the sweet potato weevil. Amendment adopted.

Held public hearing on 1971-72 Fertilizer Grade List. Approved ratio 4-1-3 with a minimum grade of 12-3-9; approved ratio 2-0-1 with a minimum grade of 14-0-7; rejected approval of ratios 9-1-1 with a minimum grade of 18-2-2; 3-4-1 with minimum grade 2-12-3 and 4-0-1 with minimum grade of 16-0-4.

Rejected proposal by O.M. Scott Company to allow specialty fertilizer-pesticide mixtures to be sold in any size packages.

Approved fertilizer grade list as amended.

Approved proposal to require industry requests for fertilizer grade changes to be submitted to the Commissioner of Agriculture by May 1 of each year.

Held public hearing and voted to require that custom mixed fertilizers come under all the requirements of the law.

Due to the interest of N.C. State University in revising the fertilizer law, the Board adopted a resolution requesting NCSU to study and report their findings to the Board of Agriculture.

Agreed to set July 1, 1972 as cut-off date for sale of 4-9-3 fertilizer.

Approved audit of 1970 North Carolina State Fair.

Adopted a resolution in support of William Parham, warehouse superintendent in legal action brought against him and the NCDA by Branch Banking and Trust Company, relative to the Farmers Grain Elevator in Warsaw.

#### October 4-5, 1971

*J. Atwell Alexander, H. G. Shelton, C. T. Hall, J. L. Sutherland, G. P. Kittrell, G. E. Fisher, David Townsend, Jr., Charles F. Phillips.*

Held a public hearing and voted to amend seed regulations, particularly as they apply to corn.

Passed a resolution requesting the U.S. Secretary of Agriculture and the President of the United States to declare those counties growing corn, peanuts and soybeans, and in the path of Hurricane Ginger, a disaster area.

Held public hearing and amended the definition of lowfat milk to bring it into agreement with the U.S. Public Health Service Grade A, Pasteurized Milk Ordinance.

Modified definition of fortified skim milk.

Recommended additional study for sale of non-dairy products to be used as a substitute for soft ice cream mix.

Approved request by Mac's Produce to lease six locations at Farmers Market at \$150 each.

Approved demolition of two dwellings and a tobacco barn at the Oxford Research Station.

Granted easement to the Duplin Watershed Improvement Commission for flood control at the old research station.

Approved sale and demolition of nine old buildings on the new research station at Clinton.

Approved request by state veterinarian to charge horse owners for lab tests to detect equine infectious anemia (swamp fever); \$5 for state owners and \$10 for out-of-state.



Approved recommendation to submit the name of the late Dr. Hal J. Rollins, DVM, to the Capital Building Authority and the Governor for naming the new animal disease diagnostic laboratory.

Agreed to renew the lease of the Pate-Darby Company on present terms for two months. At the end of that period, the Board would review their request for a three year lease at existing rent of \$125 per month rather than \$150.

Agreed to make no payments in the Southeastern Grain case until all claims had been settled in court.

#### October 5, 1971

Deferred action on making the Willard Station an equestrian park until additional studies could be made.

Officially observed National Bread Week during meeting.

Approved referendum for promotional assessment.

Authorized the N.C. State Fair manager to approve the architectural design for the exhibit building and the first choice of location be north of Dorton Arena; second choice, the farm machinery area.

#### November 15, 1971

*J. Atwell Alexander, H. G. Shelton, C. T. Hall, G. P. Kittrell, G. E. Fisher, C. F. Phillips, J. H. Poole.*

Approved revision of the regulations governing canned dog food.

Revised Food regulation to bring into agreement with the Meat and Poultry Inspection Law.

Approved registration of a one percent parathion-fungicide dust mixture for use on tobacco plant beds.

Made tomato plant quarantine permanent to control potato virus Y disease on tobacco plants.

Approved a reciprocal agreement on nursery fees with Michigan and Nebraska.

Approved leasing of four units at the Farmers Market to the Pate-Darby Co. at \$150 a month. Approved lease of space to Ford's Produce Company at \$150 per unit, per month.

Delayed action on raising the rent for Dorton Arena.

#### January 31, 1972

*J. A. Alexander, H. G. Shelton, C. T. Hall, J. L. Sutherland, J. H. Poole, G. P. Kittrell, G. E. Fisher, C. F. Phillips, David Townsend, Jr., Millard Rich, Jr., Attorney.*

Held a public hearing and rejected a proposal to add a fourth grade size for cucumbers. Existing regulations are to remain the same.

Approved emergency hog cholera regulations issued earlier by the N.C. Commissioner of Agriculture.



Approved request by the Cattlemen's and Pork Producers Associations to hold a joint six year referendum for assessment on market hogs and cattle for promotional purposes.

Voted to delay action on disposition of the Willard Research Farm. Also voted to lease the buildings and land for one year.

Approved a six year referendum for the Peach Growers Society, Inc. to provide a peach tree assessment for promotional purposes.

Authorized Alex Lewis, controller, NCDA, permission to sign documents for Property Control in the absence of the Commissioner of Agriculture.

The Controller was given permission to turn the remainder of the Old Piedmont Research Station over to Property Control for sale by bid.

Agreed to extend loan payments on Warehouses under the State Warehouse System as requested by the state superintendent.

Gave state warehouse superintendent permission to allow Property Control to make available for sale property in Albemarle on North and Depot Streets.

The controller was instructed to inform the Pate-Darby Company to sign a contract within 30 days agreeing to the new rent at the Farmers Market or to vacate the premises.

#### March 8, 1972

*J. A. Alexander, G. E. Fisher, G. P. Kittrell, J. Hawley Poole, J. L. Sutherland, Fred Colvard, Claude T. Hall, Charles F. Phillips, H. G. Shelton, David Townsend, Jr.*

Approved proposal allowing soybean seeds for sale in 1972 that germinate between 60 and 69 percent if properly labeled.

Approved North Carolina State Fair projects as submitted.

Approved increase in rental fee for all users of Dorton Arena from \$250 to \$400 per night.

Gave permission to the Food Distribution Division director to request Property Control to negotiate the purchase of a warehouse in Asheville.

Board was briefed on latest hog cholera developments.

#### June 14-15, 1972

*J. A. Alexander, H. G. Shelton, C. T. Hall, J. H. Poole, G. P. Kittrell, G. E. Fisher, C. F. Phillips, David Townsend, Jr.*

During public hearing for the 1972-73 fertilizer grade list, voted to delete Section 8-30.1 of fertilizer regulations, eliminating magnesium requirement.

Voted to request the 1973 Legislature to delete the sulfur tolerance maximum and the magnesium oxide requirement from the Fertilizer Law.

Accepted the 1972-73 fertilizer grade list as presented except for the addition of 15-10-10, the specialty fertilizer grade list as a category and the deletion of 4-9-3.

Deferred action on impregnation of fertilizers with the pesticides, Treflan and Balan, until the State Pesticide Board studied the proposal. Commissioner appointed representatives of agriculture to serve on a joint committee with pesticide representatives.

Removed requirements for annual renewal of employee health certificates in bakery and bottling regulations.

Approved new regulations regarding the white fringed beetle, witchweed and the soybean cyst nematode.

Agreed to allow the state warehouses to phase into the federal system at the appropriate time.

Approved a resolution in remembrance of the late Cecil Thomas, director of research stations.

June 15, 1972

Authorized the director of food distribution to request the assistance of the Department of Administration in preliminary negotiations for a proposed warehouse in Salisbury.

Approved emergency hog cholera regulations issued by the N.C. Commissioner of Agriculture.

Approved regulations for the North Carolina State Fair.

Authorized the appraisal of the Willard Research Station and thereafter put it up for bid.

#### EMPLOYEE OF THE MONTH

1970

July—Dr. T. B. Ryan, Director of Livestock and Poultry Disease Diagnostic Labs.

August—James R. Stevens, Chief Feed, Fertilizer and Pesticide Inspection Supervisor

September—William A. Wilder, Jr., Assistant Director, Markets Division

October—Raleigh T. (Hobo) Daniels, Assistant Director Food Distribution

November—Sam Rand, Personnel Director, Cooperative Inspection Service, Markets Division

December—William H. (Mike) Perry, Liquid Fertilizer Specialist, Weights & Measures

1971

January—Mrs. Geneva Hunt, Secretary, Diagnostic Laboratory

February—Fred P. Nooe, Food, Drug, and Cosmetic Inspector, Analytical Division

March—Elaine Harvell, Home Economist, Markets Division

April—Marion L. Kinlaw, Supervisor of Weights & Measures,  
Gasoline & Oil

May—Henry Hall, Stock Clerk

June—M. G. McKenzie, Seed Inspector, Seed Laboratory

July—Eugene T. Upchurch, Curator of Education, N.C. Museum  
of Natural History

August—W. V. Didawick, State Administrator of Credit Unions

September—William M. Palmer, Curator of Vertebrates, N.C.  
Museum of Natural History

October—Daniel E. (Ed) Wester, Grain Marketing Specialist

November—T. E. Carriker, Jr., Food, Drug and Cosmetic Inspec-  
tor, Analytical Division

December—F. Carlyle Teague, Director, Publications Division

## 1972

January—Wilbur S. Brannan, Head of Regulatory Section,  
Markets Division

February—Roxie R. Siler, Asst. Area Supv., Poultry Insp. Serv.

March—Mrs. Peggy Smith, Cashier, Accounts Division

April—B. C. Langston, Head Market News Service

May—Thomas E. Crumpler, Livestock Inspector, Veterinary  
Division

June—Mrs. Betty Griffin, Secretary to Pesticide Chemist

## EMPLOYEE OF YEAR

1970—Dr. E. W. Constable, State Chemist, retired

1971—Dr. T. F. Zweigart, State Veterinarian

**PERSONNEL**

of the

**STATE DEPARTMENT OF AGRICULTURE**JAMES A. GRAHAM, *Commissioner***GENERAL ADMINISTRATION****ADMINISTRATION**

JOHN L. REITZEL .....	<i>Deputy Commissioner</i>
WILLIAM G. PARHAM, JR. ....	<i>Assistant Commissioner</i>
WILLIAM A. WILDER, JR. ....	<i>Assistant Commissioner</i>
HAZEL I. HORNER .....	<i>Stenographer III</i>
VIRGINIA P. JOHNSON .....	<i>Administrative Secretary</i>
LINDA L. SEARS .....	<i>Stenographer II</i>
DEBORAH T. SORRELL .....	<i>Stenographer III</i>

**PUBLICITY AND PUBLICATIONS**

F. CARLYLE TEAGUE .....	<i>Information &amp; Communication Specialist III</i>
JAMES F. DEVINE .....	<i>Information &amp; Communication Specialist II</i>
JUDY LARRISON .....	<i>Court Reporter II</i>
BETTYE T. ROGERS .....	<i>Clerk II</i>
WILLIE L. SMITH .....	<i>Addressing Equipment Operator</i>
LOUISE T. WHITE .....	<i>Stenographer II</i>

**CUSTODIAL**

JAMES J. HOLIDAY .....	<i>Stock Clerk I</i>
ROBERT HARRIS .....	<i>Stock Clerk II</i>





## PUBLICATIONS

F. CARLYLE TEAGUE

*Director*

Communications today are vital to any organization, public or private. Therefore, for the North Carolina Department of Agriculture to function, it is imperative for the Publications Division to disseminate information accurately and with dispatch.

For the department to serve the people of North Carolina, the public must be kept informed of the latest developments for which the NCDA is responsible.

Agriculture and the consumer are the prime responsibilities of the multi-faceted department. To reach them, virtually every available medium is utilized. This is accomplished through press releases, feature articles, interviews, news conferences, the bulletin series and this Biennial Report.

Along with the service to the public media the division publishes the Agricultural Review. This tabloid serves the farmer, agribusiness and the consumer. Over 1,000 articles are carried

annually in the twice monthly publication along with a classified advertising section called *Farm Wants*.

The free want ad service is invaluable to farmers in selling and securing agricultural supplies and livestock. It presently has a circulation of 98,000, an increase of 7,000 over the last biennium. The Review is free upon request to any citizen of North Carolina, and with justification, to those outside the state.

In every phase of its work, the Publication Division's responsibilities grow as demands upon the Department as a whole increase. In addition to new programs and responsibilities placed in the Department there are multiplying complexities within each of these responsibilities as they relate to consumer services and regulatory programs. These, in turn, require an ever greater volume of work in the division's function not only as the information office but also in its service to the Board of Agriculture.

The division provides secretarial service to the Board of Agriculture, the staff keeps fully informed of, not only the Department's service and regulatory programs, but of their background as well. This kind of knowledge of the history of Department programs, the steps in developing regulatory measures and other such details is essential in our work as an information division.

In addition to keeping minutes of meetings, secretarial service to the Board include advertising and recording public hearings; coding, printing and filing regulations as required by law; maintaining a master set of all regulations and responsibility for revising and reprinting the various chapters from time to time. A corollary responsibility is the printing of laws administered by the Department, after checking them with the statute books to embody amendments enacted from time to time by the General Assembly.

The technical complexities involved in so many of the Department's regulatory responsibilities have necessitated appointments of numerous special committees to explore the needs and make recommendation for regulatory amendments to the Board of Agriculture. Publications Division staff members must attend most of these meetings to be sufficiently informed to help properly prepare and code the regulations when presented. We must also prepare news releases on developments, so that those concerned will be fully informed when these matters are discussed in public hearings.



## CREDIT UNION DIVISION

JOSEPH M. JONES

*Administrator*

The North Carolina Credit Union Law was enacted by the 1915 General Assembly. North Carolina was the third state in the Union to adopt such legislation. Because its primary purpose was to provide a way for farmers to take care of short-term credit needs at a reasonable rate of interest through their own cooperative efforts, the law designated the Department of Agriculture as the administrative agency.

Throughout the years, the credit unions suffered because of the lack of efficient leaders trained in business matters. Crop failures, likewise, adversely affected the credit union movement in farm areas, and within recent years, the federal government has offered various forms of credit to farmers. Banks have established personal loan departments and are anxious to assist farmers in meeting their credit needs.



It is not surprising, therefore, that under these circumstances rural credit unions have declined while urban credit unions have increased with the industrialization of the state. As of June 30, 1972, there were still 30 state-chartered rural or residential type credit unions with total assets of 6 million dollars. We now have 223 credit unions with total assets of 196.5 million dollars belonging to 230 thousand members.

This division administers the laws and regulations governing state-chartered credit unions in North Carolina. Subchapter III of Chapter 54 of the General Statutes places the responsibility for chartering, examining, supervising and liquidating on this division. Our duty is to see that statutory requirements are complied with and interests of the depositors are protected. The examinations conducted are therefore directed to a determination of the credit unions solvency, the degrees of competence of its management and its compliance with the laws under which it operates.

Mr. W. V. Didawick who served as Administrator of credit unions for approximately 17 years, retired December 31, 1971. Under his guidance and leadership credit unions in North Carolina grew from 19 million in total assets with 80,000 members to 174 million in total assets and 223,000 members. I had the privilege of working under Mr. Didawick as an examiner for 10 years until my appointment on December 1, 1971 by Commissioner James A. Graham as his successor.

The State Government Reorganization Act of 1971, under Chapter 143A-180 of the General Statutes transferred the Credit Union Division by a type II transfer, to the newly created Department of Commerce. This transfer was completed July 1, 1972.

Since this will be the final biennial report submitted to the Department of Agriculture by this Division, I would just like to say personally, that my association and acquaintances with the people within the department has been most gratifying and rewarding. I shall hold this remembrance to the highest esteem.

#### NUMBER, MEMBERSHIP, AND ASSETS OF STATE-CHARTERED CREDIT UNIONS

	<i>June 30, 1972</i>	<i>June 30, 1970</i>	<i>Increase (Decrease)</i>
Total Charters Outstanding .....	223	216	7
Total Members .....	222,408*	185,365	37,043
Total Assets .....	\$196,583,960	\$124,647,027	\$ 71,936,933

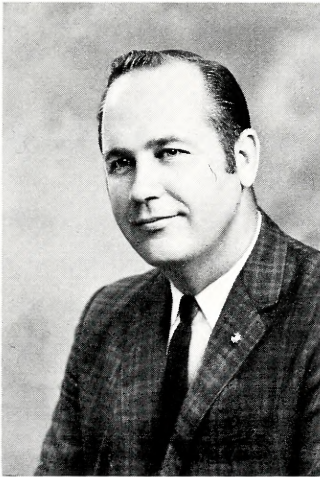
\* December 31, 1971 total members

# NORTH CAROLINA CREDIT UNIONS CONSOLIDATED BALANCE SHEET

Assets	June 30, 1972	June 30, 1970	Increase (Decrease)
Cash on Hand and in			
Banks .....	\$ 5,760,115.87	\$ 5,188,272.18	\$ 571,843.69
Loan to Members .....	149,350,717.15	100,816,336.31	48,534,380.84
Investments and Bonds	37,937,112.84	17,090,008.60	20,847,104.24
Other Assets .....	3,536,014.46	1,552,409.81	1,983,604.65
	<u>\$196,583,960.32</u>	<u>\$124,647,026.90</u>	<u>\$ 71,936,933.42</u>
Liabilities			
Deposits .....	\$ 5,881,928.50	\$ 3,908,838.31	\$ 1,973,090.19
Shares .....	169,885,670.38	106,390,763.92	63,494,906.46
Reserves .....	8,701,381.18	6,193,558.54	2,507,822.64
Undivided Earnings & Surplus .....	6,331,011.44	4,473,806.50	1,857,204.94
Other Liabilities .....	5,783,968.82	3,680,059.63	2,103,909.19
	<u>\$196,583,960.32</u>	<u>\$124,647,026.90</u>	<u>\$ 71,936,933.42</u>







ALEX M. LEWIS  
controller

*office of fiscal management  
and administrative services*

farmers market

state fair

rural rehabilitation

## PERSONNEL

### Office of Fiscal Management And Administrative Services

#### ACCOUNTS

ALEX M. LEWIS	Assistant Commissioner—Controller
JOSEPH C. ALLEN, JR.	Accountant II
ELIZABETH B. BAREFOOT	Stenographer III
NANCY A. BLINSON	Stenographer III
BEULAH J. BUNN	Accounting Clerk III
EWELL E. EVANS	Tax Auditor IV
LOREN I. GILBERT	Tax Auditor III
MAVOREEN S. HINTON	Accounting Clerk II
GERTRUD H. LARE	Personnel Assistant
BETHANY A. LEWIS	Stenographer II
ELLEN P. MCGHEE	Stenographer II
MARY M. MACON	Typist II
BECKY C. MEADOWS	Bookkeeping Machine Operator II
ELIZABETH W. MITCHINER	Accounting Clerk III
PHYLLIS P. O'NEAL	Accounting Clerk II
PHILIP K. POWELL	Personnel Officer II
SARAH K. SANDERSON	Clerk III
PEGGY Y. SMITH	Accounting Clerk IV
JOSEPHINE W. SIMMONS	Typist II
LUNELLE YEARGAN	Accounting Clerk V

#### STATE FAIR

ARTHUR K. PITZER	Manager, N. C. State Fair
GEORGE S. BARGER	Electrician II
TROY M. BUNN	Maintenance Mechanic IV
WILLIE H. BUNN	Maintenance Mechanic I
FRANCES H. COLVIN	Stenographer I
CAROLYN M. HENRY	Stenographer II
RAY H. JOHNSON	Maintenance Mechanic I
HARRIS L. JONES	General Utility Man
EDNA E. KIPP	Administrative Officer I
QUINTON MAYNARD	Maintenance Mechanic I
FRED M. MOORE	Laborer
ANDREW H. PEEDIN	Carpenter II
STEPHANIE W. STEPHENSON	Accounting Clerk III
MOODY E. TAYLOR	Maintenance Mechanic I
WILLIAM E. WHITAKER	Laborer
EARL L. WILLIAMS	Maintenance Mechanic II
JERRY E. WILLIAMS	Maintenance Mechanic I
GEORGE K. WILLIS	Storeroom Manager
ROBERT L. WILLS	Information & Communications Specialist III

#### FARMERS MARKET

CHARLES G. MURRAY	Manager Farmers Market
SANDRA D. PEARCE	Stenographer II

**ACCOUNTS**

ALEX M. LEWIS

*Controller*

The Central Division of Accounts and Personnel is responsible for management and control of the fiscal and personnel affairs for the Department of Agriculture proper and all other General Fund and Special Fund Programs administered by the department. Responsibilities of this division include: procurement of operational funds, procurement of operational supply requirements, acceptance and accounting for receipts, the disbursement of funds, budget maintenance and control, the collection of a variety of taxes and fees and the collection of assessments for ten agricultural promotional organizations and foundations, and personnel management and control.

**DEPARTMENT OF AGRICULTURE**

General Fund — Code 28021

Statement of Disbursements

July 1, 1970 - June 30, 1972

**Summary By Purposes**

	1971-72	1970-71
<b>General Administration:</b> .....	\$ 565,431.47	\$ 469,679.48
Administration .....	117,881.65	109,826.84
Accounting .....	212,209.94	161,626.50
Publications .....	96,813.27	84,146.08
Custodial .....	13,519.89	12,689.51
Miscellaneous .....	125,006.72	101,390.55
<b>Inspection and Regulation:</b> .....	\$ 2,372,274.12	\$ 2,036,397.39
Feed, Fertilizer, Insecticide Inspection ..	102,824.93	126,706.93
Egg Inspection .....	84,276.24	78,899.43
Entomology Inspection .....	279,361.96	214,968.09
Weights and Measures Inspection .....	243,556.59	237,603.87
Meat and Poultry Inspection .....	1,662,254.40	1,378,219.07
<b>Markets Division:</b> .....	\$ 813,249.11	\$ 788,804.01
<b>Analytical and Regulation:</b> .....	\$ 1,377,868.11	\$ 1,185,425.88
Dairy Services .....	189,039.96	166,591.10
Seed Testing .....	204,678.93	188,707.07
Analytical (Chemistry) .....	628,347.17	635,999.39
Soil Testing .....	207,805.83	194,128.32
Pesticide .....	147,996.22	
<b>Crop Statistics Division:</b> .....	\$ 329,148.47	\$ 290,707.30
<b>Veterinary Division:</b> .....	\$ 1,554,065.60	\$ 1,940,868.42
<b>Research Stations Operations:</b> .....	\$ 1,219,177.28	\$ 1,127,150.20



State Museum of Natural History: .....	\$ 166,266.37	\$ 143,867.15
Distribution of USDA Donated Commodities:	\$	\$
Revolving Fund .....	2,385.58	26,808.41
General Program — Distribution to Needy Families .....	426,191.17	597,222.47
Federal Financial Assistance Fund .....	832,280.64	464,579.49
Agricultural Center, Western N.C.: .....	\$ 3,755.36	\$ 3,806.64
Imprest Cash Fund: .....	\$ 11,175.00	\$ 11,650.00
Foreign Trade Development: .....	\$ 14,260.08	\$ 8,372.61
Structural Pest Control: .....	\$ 83,857.83	\$ 77,739.27
Transfer to Code 66970—Capital Improvements 1969: .....		\$ 50,000.00
Livestock and Poultry Disease Diagnostic Laboratory		
Transfer to 1971-72 for Deferred Obligations:		\$ 13,077.00
Transfer to 1972-73 for Deferred Obligations:	\$ 103,284.00	
Total Disbursements: .....	\$ 9,874,670.19	\$ 9,236,155.72

### Summary By Objects:

	1971-72	1970-71
Salaries and Wages .....	\$ 6,008,274.87	\$ 5,298,093.91
Supplies and Materials .....	370,538.27	336,392.67
Postage, Telephone, Telegraph and Express .....	116,522.63	98,362.38
Travel Expense .....	529,159.29	470,739.95
Printing and Binding .....	46,248.89	57,873.54
Motor Vehicle Operation .....	90,765.77	95,564.56
Lights, Power and Water .....	24,176.62	19,142.08
Repairs and Alterations .....	81,616.13	64,091.71
General Expense .....	1,417,285.45	1,815,510.22
Insurance and Bonding .....	6,478.50	5,534.35
Equipment .....	280,725.73	217,201.93
Stores for Resale .....	3,910.71	1,863.72
Contributions to Retirement System .....	509,262.10	447,249.56
Contribution to Social Security .....	268,487.88	233,234.42
Imprest Cash Fund .....	11,175.00	11,650.00
Transfer to Code 66970 — Capital Improvements .....		50,000.00
Salaries and Wages — Premium Payments .....	1,213.70	573.72
Salaries and Wages — Overtime .....	550.19	
Deferred Obligations Transferred to 1971-72 .....		13,077.00
Wages for Employees Loaned .....	4,994.46	
Deferred Obligations Transferred to 1972-73 .....	103,284.00	
TOTAL DISBURSEMENTS .....	\$ 9,874,670.19	\$ 9,236,155.72

## DEPARTMENT OF AGRICULTURE

Code 28021

## Statement of Receipts

Years Ended June 30, 1972 and June 30, 1971

	1971-72	1970-71
<b>Agricultural Receipts:</b>		
Fertilizer Tax .....	\$ 406,343.95	\$ 425,788.52
Feed Tax .....	232,055.57	235,856.79
Research Stations .....	327,795.97	339,353.17
Miscellaneous .....	488,353.30	490,602.02
<b>Federal Funds:</b>		
Research and Marketing Act .....	81,302.00	77,283.00
USDA Cooperative Agreement .....	3,226.46	398.85
Talmadge-Aiken Act .....	122,706.69	93,863.42
Wholesome Meat Act .....	753,990.88	632,741.72
Federal Financial Assistance .....	793,780.43	388,575.94
USDA Cooperative Agreement (Entomology) .....	10,532.39	
Wholesome Poultry Products .....	39,359.51	
<b>Miscellaneous Receipts:</b>		
Pesticide Fees .....	109,987.75	
Sale of Equipment .....	4,164.96	3,738.84
Transfers from Other Codes .....	31,698.75	43,152.31
Miscellaneous .....	141,853.89	146,135.55
Imprest Cash Redeposit .....	11,175.00	11,650.00
Transferred from 1969-70 for Deferred Obligations .....		50,913.00
Wages for Employees Loaned .....	5,438.56	5,271.70
Structural Pest Receipts .....	73,396.00	65,118.00
Transferred from 1970-71 for Deferred Obligations .....	13,077.00	
<b>TOTAL RECEIPTS</b> .....	<u>\$ 3,650,239.06</u>	<u>\$ 3,010,442.83</u>

## Summary Statement of Receipts and Disbursements

	1971-72	1970-71
<b>General Fund Appropriation</b> .....	\$ 6,538,212.00	\$ 6,391,221.00
<b>Receipts</b> .....	<u>3,650,239.06</u>	<u>3,010,442.83</u>
<b>Total Availability</b> .....	\$10,188,451.06	\$ 9,401,663.83
<b>Disbursements</b> .....	<u>9,874,670.19</u>	<u>9,236,155.72</u>
<b>Unexpended Balance June 30</b> .....	<u>\$ 313,780.87</u>	<u>\$ 165,508.11</u>

**GASOLINE AND OIL INSPECTION**

General Fund Code — 12201

**Summary Statement of Receipts and Disbursements**

July 1, 1970 - June 30, 1972

	1971-72	1970-71
General Fund Appropriation .....	\$ 177,738.00	\$ 167,514.00
<b>Receipts:</b>		
Transfer from Highway Fund .....	511,911.00	470,590.00
Sale of Equipment .....	8.00	110.86
Brought Forward from 1970-71 General Fund Appropriation .....	1,600.00	
Disbursements .....	669,539.15	611,813.81
Unexpended Balance of Appropriation .....	\$ 21,717.85	\$ 26,401.05

**STATE WAREHOUSE SYSTEM FUND**

Special Fund — Code 28727

**Statement of Changes in Cash Balance**

Years Ended June 30, 1972 and June 30, 1971

	1971-72	1970-71
Cash Balance — July 1 .....	\$ 18,759.87	\$ 12,165.16
<b>Receipts:</b>		
Supervision Collections .....	21,023.40	42,925.97
Fire Losses .....	38,634.17	4,256.92
Repayment of Loans .....	50,770.00	77,820.00
Sale of U. S. Treasury Bills .....	520,000.00	160,000.00
Sale of Equipment .....		40.11
Sale of U. S. Savings Bonds .....	86,000.00	
<b>Disbursements:</b>		
Supervision Expenditures .....	49,807.11	40,196.20
Fire Losses .....	38,634.17	4,256.62
Purchase of U. S. Treasury Bills .....	619,677.80	233,995.47
Cash Balance — June 30 .....	27,068.36	18,759.87
Loans to Warehouses .....	321,106.70	371,876.70
Invested in 2½% U. S. Gov't. Bonds .....	1,500.00	240,000.00
Invested in U. S. Treasury Bills .....	350,000.00	87,500.00
Total Worth — June 30 .....	\$ 699,675.06	\$ 718,136.57



**COOPERATIVE INSPECTION SERVICE**

Special Fund — Code 28731

Statement of Changes in Fund Balance

Years Ended June 30, 1972 and June 30, 1971

	1971-72	1970-71
Fund Balance July 1 .....	\$ 697,593.29	\$ 492,485.04
Receipts .....	974,796.11	1,174,553.83
Disbursements .....	1,113,264.00	969,445.58
Fund Balance June 30 .....	<u>\$ 559,125.40</u>	<u>\$ 697,593.29</u>
Fund Balance Represented by:		
Treasurer's Cash .....	\$ 519,125.40	\$ 657,593.29
2½ % U. S. Government Bonds .....	40,000.00	40,000.00
Balance As Above .....	<u>\$ 559,125.40</u>	<u>\$ 697,593.29</u>

**CREDIT UNION SUPERVISION**

Special Fund — Code 28739

Statement of Changes in Cash Balance

Years Ended June 30, 1972 and June 30, 1971

	1971-72	1970-71
Cash Balance — July 1 .....	\$ 205,186.04	\$ 179,993.76
Receipts .....	147,391.04	156,941.15
Disbursements .....	352,577.08	131,748.87
Cash Balance — June 30 .....	<u>\$ —0—</u>	<u>\$ 205,186.04</u>

**N. C. STATE FAIR**

Special Fund — Code 28741

Statement of Changes in Cash Balance

Years Ended June 30, 1972 and June 30, 1971

	1971-72	1970-71
Fund Balance July 1 .....	\$ 480,589.13	\$ 302,442.78
Receipts .....	928,312.16	1,010,181.83
Disbursements .....	1,200,745.85	832,035.48
Cash Balance June 30 .....	<u>\$ 208,155.44</u>	<u>\$ 480,589.13</u>

**SHEEP AND WOODLAND REVOLVING FUND**

Special Fund — Code 28745

Statement of Changes in Cash Balance

Years Ended June 30, 1972 and June 30, 1971

	1971-72	1970-71
Cash Balance — July 1 .....	\$ 92,199.23	\$ 89,662.66
Receipts .....	38,767.66	122,554.38
Disbursements .....	28,548.42	120,017.81
Cash Balance — June 30 .....	<u>\$ 102,418.47</u>	<u>\$ 92,199.23</u>

**SPECIAL DEPOSITORY ACCOUNT**

Special Fund — Code 28751

Statement of Changes in Cash Balance

Years Ended June 30, 1972 and June 30, 1971

	1971-72	1970-71
Cash Balance — July 1 .....	\$ 190,026.80	\$ 377,788.47
<b>Receipts:</b>		
Cash Bond Deposits .....	1,500.00	500.00
Surplus Commodities Revolving Fund .....	5,914.20	29,530.88
Research and Marketing Act .....	81,302.00	77,283.00
Repayment of Loan to Warehouse .....	2,000.00	
Wholesome Meat Act .....	818,983.53	604,267.80
Talmadge-Aiken Act .....	121,000.00	99,635.03
Federal Financial Assistance .....	702,473.68	467,000.00
Egg Breaking Operation .....	3,600.00	
Wholesome Poultry Products .....	42,000.00	
<b>Disbursements:</b>		
Refund of Bond Deposits .....	\$	\$ 500.00
Transfer to Code 28021:		
Revolving Fund .....	2,385.58	26,808.41
RMA .....	81,302.00	77,283.00
Contingency Fund .....	2,000.00	10,300.00
Wholesome Meat Act .....	762,868.13	632,741.72
Talmadge-Aiken Act .....	124,050.44	93,863.42
Federal Financial Assistance .....	793,780.43	388,575.94
Wholesome Poultry Products .....	39,359.51	
Hall of Fame .....		13.31
Reimburse USDA — Cash June 30:		
Federal Financial Assistance .....	15,267.06	235,892.58
Cash Balance — June 30 .....	<u>\$ 147,787.06</u>	<u>\$ 190,026.80</u>

**OPERATION OF FARMERS MARKET**

Special Fund — Code 28755

Statement of Changes in Cash Balance

Years Ended June 30, 1972 and June 30, 1971

	1971-72	1970-71
Cash Balance — July 1 .....	\$ 36,154.06	\$ 22,982.99
Receipts .....	118,867.29	112,199.57
Disbursements .....	<u>97,702.23</u>	<u>99,028.50</u>
Cash Balance — June 30 .....	<u>\$ 57,319.12</u>	<u>\$ 36,154.06</u>

**CAPITAL IMPROVEMENTS OF 1965**

Code 66558

Statement of 1965 Capital Improvements

Years Ended June 30, 1972 and June 30, 1971

	1971-72	1970-71
Appropriation .....	\$	19,638.00
Receipts .....		—0—
Disbursements .....		<u>19,492.00</u>
Unexpended Balance of Appropriation ....	\$	<u>146.00</u>
Unexpended Balance of Appropriation Re- verted to General Fund 6-30-71 .....		<u>146.00</u>
Balance .....		<u>—0—</u>

**CAPITAL IMPROVEMENTS OF 1967**

Code 66770

Statement of 1967 Capital Improvements

Years Ended June 30, 1972 and June 30, 1971

	1971-72	1970-71
Appropriation .....	\$	163,144.07
Receipts .....		—0—
Disbursements .....		119,093.41
Unexpended Balance of Appropriation ....	\$	<u>44,050.66</u>
Unexpended Balance of Appropriation Re- verted to General Fund 6-30-71 .....		<u>44,050.66</u>
Balance .....		<u>—0—</u>



## NORTH CAROLINA DEPARTMENT OF AGRICULTURE

## Statement of 1969 Capital Improvements

From Inception Through June 30, 1972

Appropriation: .....	\$ 993,100.00
Receipts:	
Sale of Land—Old Piedmont Test Farm ..	94,432.00
Sale of Cows, Equipment and Milk Base— Coastal Plain Research Station .....	17,629.17
Right-of-way, Duke Power Company— Piedmont Research Station .....	5,198.80
Insurance Settlement—Fire Damage to Curing Barn .....	9,407.00
Sale of Land—Oxford Tobacco Research Station .....	56,875.00
Sale of Buildings, etc.—Coastal Plain Research Station .....	938.15
Lewiston By-Pass Easement—Peanut Belt Research Station .....	3,100.00
Sale of Cattle—Mountain Research Station .....	12,851.06
Sale of Timber—Piedmont Research Station .....	793.05
Insurance Settlement—Fire Damage— Piedmont Research Station .....	558.92
Matching Funds—Regional Counties, Western N. C. ....	25,000.00
Transfer from Code 66770 .....	39,805.98
Transfer from Code 28021 XVI— Unexpended Balance (1969-70) .....	50,000.00
Transfer from Code 28741—Item Nos. 1, 12, 13, 14, 15 .....	82,000.00
Total Availability .....	\$ 1,391,689.13
Disbursements:	
1. Repairs to Dorton Arena—State Fairgrounds .....	\$ 100,629.57
2. Diagnostic Laboratory—Western, N. C. ....	5,366.78
3. Research Station—Southeastern, N. C. ....	301,273.41
4. Livestock and Poultry Disease Diagnostic Laboratory, Raleigh, N. C. ....	501,120.93
6. Purchase of Land—Livestock and Poultry Diagnostic Laboratory, Raleigh, N. C. ....	2,741.37
7. Swine Development Improvement— Upper Coastal Plain Research Station .....	55,474.90
8. Replacement of Burned Curing Barn— Oxford Tobacco Research Station ....	9,403.92
9. Replacement of Fire Damaged Equip- ment—Piedmont Research Station ...	558.92
10. Tobacco Evaluation Building—Oxford Tobacco Research Station .....	39,085.28
12. Replace roof on Education Building— State Fairgrounds .....	20,612.44
13. Paving of Roadway and Parking Area —State Fairgrounds .....	15,423.70
14. Concrete Floors for Lunch Stands— State Fairgrounds .....	10,285.50
15. Metal Tool and Supply Building— State Fairgrounds .....	18,578.68

Total Disbursements .....	\$ 1,080,555.40
Unexpended Balance June 30, 1972 .....	\$ 311,133.73

NORTH CAROLINA DEPARTMENT OF AGRICULTURE

Statement of 1971 Capital Improvements  
From Inception Through June 30, 1972

Appropriation: .....	\$ 1,382,612.00	
Receipts:		
Transfer from Code 28755—Item No. 7 ...	11,000.00	
Transfer from Code 28741—Item Nos. 2, 17, 18, 19, 20, 21, 22, 23, 24 .....	351,600.00	
Sale of Buildings—Horticultural Crops Research Station .....	4,491.92	
Total Availability .....		\$ 1,749,703.92
Disbursements:		
2. Events and Exhibit Building—State Fairgrounds .....	\$ 21,270.00	
3. Agronomic Services Laboratory— Raleigh, N. C. ....	12,325.00	
6. Sweet Potato Facility—Horticultural Research Station—Clinton, N. C. ....	211.75	
7. Additional Toilets—State Farmers Market .....	10,408.46	
Total Disbursements .....		44,215.21
Unexpended Balance June 30, 1972 .....		\$ 1,705,488.71

AGRICULTURAL FOUNDATION ASSESSMENT

Statement of Changes in Cash Balance  
Years Ended June 30, 1972 and June 30, 1971

	1971-72	1970-71
Cash Balance — July 1 .....	\$ 58,612.20	\$ 59,974.36
Receipts .....	181,179.70	186,404.76
Disbursements .....	187,320.78	187,766.92
Cash Balance — June 30 .....	\$ 52,471.12	\$ 58,612.20

**APPLE ASSESSMENT****Statement of Changes in Cash Balance****Years Ended June 30, 1972 and June 30, 1971**

	1971-72	1970-71
Cash Balance — July 1 .....	\$ 372.43	\$ 250.92
Receipts .....	34,892.45	36,921.51
Disbursements .....	34,200.00	36,800.00
Cash Balance — June 30 .....	<u>\$ 1,064.88</u>	<u>\$ 372.43</u>

**CATTLE ASSESSMENT****Statement of Changes in Cash Balance****Years Ended June 30, 1972 and June 30, 1971**

	1971-72	1970-71
Cash Balance — July 1 .....	\$ 458.54	\$ 495.09
Receipts .....	22,859.65	22,463.45
Disbursements .....	23,000.00	22,500.00
Cash Balance — June 30 .....	<u>\$ 318.19</u>	<u>\$ 458.54</u>

**COTTON ASSESSMENT****Statement of Changes in Cash Balance****Years Ended June 30, 1972 and June 30, 1971**

	1971-72	1970-71
Cash Balance — July 1 .....	\$ 245.82	\$ 283.02
Receipts .....	24,827.80	29,662.80
Disbursements .....	24,300.00	29,700.00
Cash Balance — June 30 .....	<u>\$ 773.62</u>	<u>\$ 245.82</u>

**EGG ASSESSMENT****Statement of Changes in Cash Balance****Years Ended June 30, 1972 and June 30, 1971**

	1971-72	1970-71
Cash Balance — July 1 .....	\$ 2,683.70	\$ 1,734.09
Receipts .....	92,341.50	74,049.61
Disbursements .....	90,700.00	73,100.00
Cash Balance — June 30 .....	<u>\$ 4,325.20</u>	<u>\$ 2,683.70</u>



PEACH ASSESSMENT

Statement of Change in Cash Balance

Years Ended June 30, 1972 and June 30, 1971

	1971-72	1970-71
Cash Balance — July 1 .....	\$ 159.02	\$ 680.79
Receipts .....	2,740.19	3,078.23
Disbursements .....	2,790.00	3,600.00
Cash Balance — June 30 .....	<u>\$ 109.21</u>	<u>\$ 159.02</u>

PEANUT ASSESSMENT

Statement of Changes in Cash Balance

Years Ended June 30, 1972 and June 30, 1971

	1971-72	1970-71
Cash Balance — July 1 .....	\$ 14,859.15	\$ 590.74
Receipts .....	60,417.78	83,718.41
Disbursements .....	74,800.00	69,450.00
Cash Balance — June 30 .....	<u>\$ 476.93</u>	<u>\$ 14,859.15</u>

SOYBEAN ASSESSMENT

Statement of Changes in Cash Balance

Years Ended June 30, 1972 and June 30, 1971

	1971-72	1970-71
Cash Balance — July 1 .....	\$ 386.61	\$ 860.78
Receipts .....	77,894.27	80,425.83
Disbursements .....	78,000.00	80,900.00
Cash Balance — June 30 .....	<u>\$ 280.88</u>	<u>\$ 386.61</u>

SWEET POTATO ASSESSMENT

Statement of Changes in Cash Balance

Years Ended June 30, 1972 and June 30, 1971

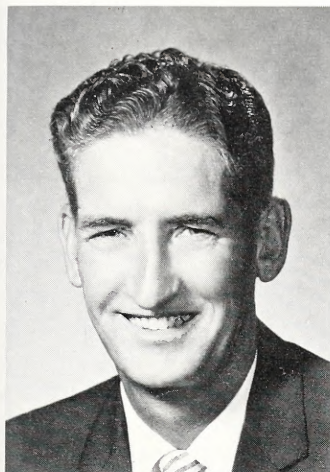
	1971-72	1970-71
Cash Balance — July 1 .....	\$ 4,694.42	\$ 341.02
Receipts .....	27,755.95	40,853.40
Disbursements .....	32,300.00	36,500.00
Cash Balance — June 30 .....	<u>\$ 150.37</u>	<u>\$ 4,694.42</u>

## SWINE ASSESSMENT

## Statement of Changes in Cash Balance

Years Ended June 30, 1972 and June 30, 1971

	1971-72	1970-71
Cash Balance — July 1 .....	\$ 1,977.20	\$ 1,104.76
Receipts .....	128,573.81	122,972.44
Disbursements .....	129,600.00	122,100.00
Cash Balance — June 30 .....	<u>\$ 951.01</u>	<u>\$ 1,977.20</u>



## FARMERS MARKET

CHARLES G. MURRAY

*Market Manager*

During the past biennium the Market has continued its primary purpose, serving the produce industry from producer to consumer. Every effort has been made to expand the services by providing broader coverage of marketing information by means of newsletters, radio and television coverage. Demand, supply, and price information are essential to the most efficient and effective marketing.

It would be most difficult to accurately appraise the importance and true value of the Farmers Market as it relates to the food supply and distribution in the area served by the Market which is essentially all of North Carolina and neighboring states.

The Market does not compete with the major chains, larger wholesalers and brokers. It cooperates with and supplements allied food industries. The larger chains generally buy in carlot and trucklot quantities for distribution through their grocery



stores. Operators on the Farmers Market supply many small chain grocery stores, independent grocerymen and wholesalers. Also, the major grocery chain stores purchase a considerable volume from the twelve fresh produce operators on the Market. This is especially true in cases where chain store purchases have been delayed or rejected upon arrival account of failing to meet contractual specifications.

The Market operations consists of twelve permanent or annual wholesale fresh produce dealers who lease the forty-three wholesale units on an annual basis and who handle all kinds of produce grown in the United States, and many items from eight to ten foreign countries which are not available in our country at certain periods. This affords our customers a wide variety of fresh produce each month of the year at reasonable prices; a wholesale grocery firm which supplies just about any item, except fresh, that a groceryman may need; a restaurant to serve employees, buyers, sellers and truckers; a lawn, garden, and nursery center, and a fruit and vegetable broker; twenty-five shed spaces for produce truckers who rent by the week or month; and twenty-two retail stalls which are also rented on a weekly basis. This complex makes the Market a complete and unique operational center for the food industry.

Hundreds of local farmers sell on the Market annually. Sixty-three spaces are provided for their use. They pay a nominal "gate fee" for the use of the spaces. They sell directly from their vehicles to the buyer who may be a housewife, a wholesale firm, or a groceryman. This is a true tradition dating back for one hundred or more years where the producer and buyer met face-to-face and transacted their dealings. This is especially important for the small growers who do not produce in sufficient quantities to justify expensive grading and sorting and packaging equipment.

The retail operations are also a true tradition of centuries. There are still thousands of consumers who enjoy the opportunity and experience of shopping for fresh produce where they can visit ten or fifteen sellers within a small area and personally handle and select the fruit or vegetable of his or her choice. This is evidenced by the fact that on a typical Saturday from June to September more than 300 vehicles per hour enter the Market between 8:00 a.m. and 6:00 p.m. with a peak of more than 400 per hour during the rush hours from 10:00 a.m. to 2:00 p.m. This indicates the desire for farm fresh produce for canning, freezing and fresh consumption.

A few facts (statistical information) are given as evidence of the broad use of the Market:

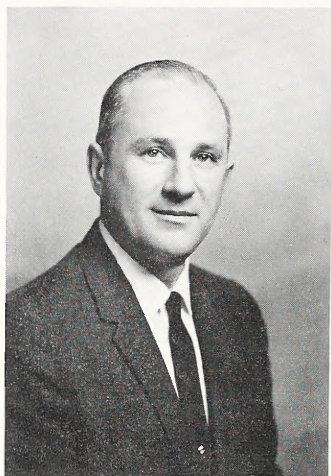
### Deliveries By Farmers

Fruits (mainly apples and peaches) . . . . .	173,620 bushels
Berries . . . . .	4,818 (12 pints)
Corn, dozen count . . . . .	88,390
Vegetables, bunched — dozens . . . . .	17,700
Vegetables, bushels . . . . .	127,765
Tomatoes, 50 lb. basis . . . . .	26,000
Potatoes, Irish, bushel basis . . . . .	8,825
Potatoes, Sweet, bushel basis . . . . .	20,830
Pecans, pounds . . . . .	6,800
Cantaloupes, watermelons . . . . .	659,600
Pumpkins . . . . .	41,369

### Received By 12 Wholesalers

5,698	Complete truck loads
9,579	Part truck loads

Note: Large quantities are also received by railroad but we have no way to determine the volume. Also, no accurate way to determine the volume handled by wholesale truckers who operate seasonally and rent spaces by week or month.



## THE STATE FAIR

ARTHUR K. PITZER

*Manager*

The recent biennium was a busy one for the North Carolina State Fair and like the previous one, saw several progressive moves, both during fairtime and year-round.

Records were established in non-fairtime use of the grounds and buildings during both 1970 and 1971. In 1970 the grounds were used 219 times, including 128 uses of Dorton Arena and involved a total of just under 400,000 in attendance. The figures for the following year were 359 total, 127 arena and 438,000 attendance.

During the first six months of 1972 the attendance figures have already exceeded the quarter-million mark.

Fair attendance was also particularly pleasing despite inclement weather during both annual events. Although there were several cold days in 1970 and two days involving rain, 532,857 viewed the event. Profits from the 9-day run were the highest in history, more than \$216,000. Despite five days of rain in 1971, the Fair profit was recorded at \$85,000 as 484,066 were on hand.



Aided by some capital improvement funds allotted by the General Assembly, but otherwise operating out of its own revenue the Fairgrounds has recorded several renovations and improvements and others are currently underway.

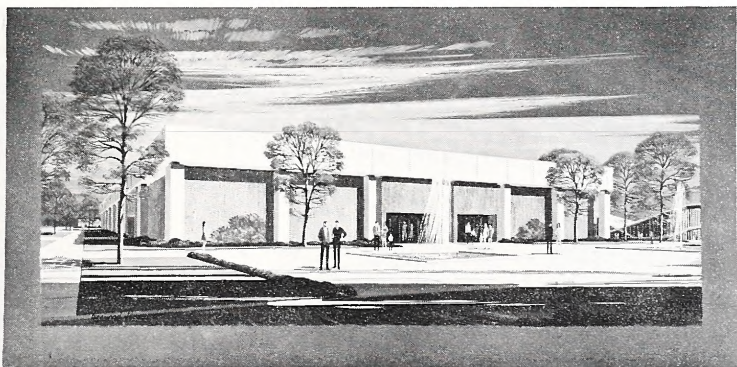
These and other major changes in State Fair policy have been aided by a Fair Advisory Board established in 1971 which included three members of the Board of Agriculture, two agricultural businessmen and the current President of the North Carolina Association of Agricultural Fairs.

With monies allotted from the general fund, a new roof was installed on Dorton Arena, replacing the 20-year old original covering. Utilizing State Fair funds, a new roof was placed on the Educational Building, two parts of a three-part fencing program have been completed, concrete floors have been poured into the eating stands, the roadway behind the grandstand has been paved and the interior of the Commercial Building has been reworked including paneling the walls.

A new tool shop was constructed and will house the Fair's equipment and inventory system. A warehouseman has been added to the staff.

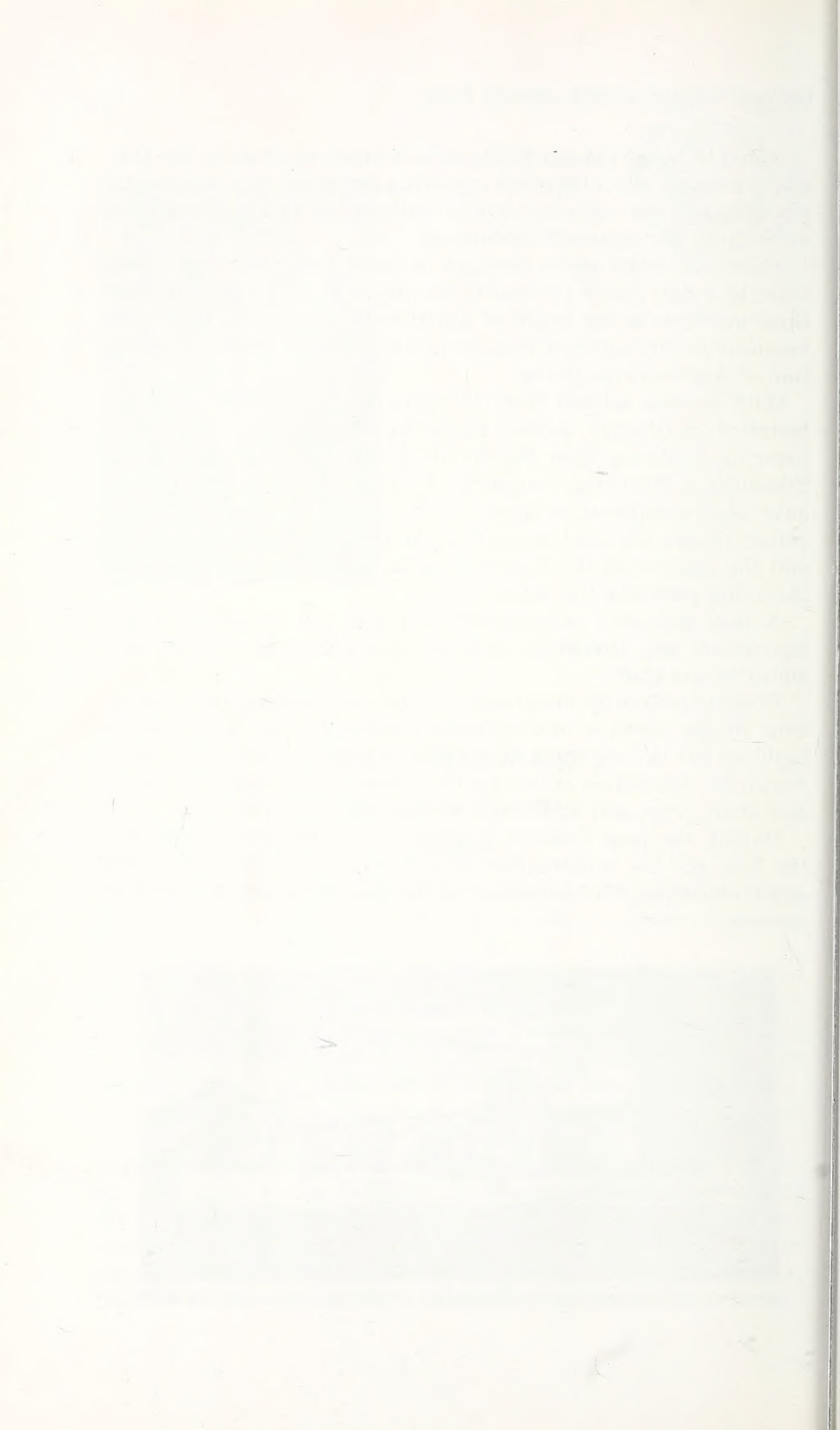
Projects currently underway include landscaping for a permanent flower show, a new children's barnyard and a permanent building for the old farm machinery. There are also plans being drawn for renovation of the Youth Center kitchen, the horse barns and show rings and additional paving for arena parking.

During the past General Assembly \$350,000 was extended to the Fair for the construction of a nearly \$1,000,000 events and exhibit building. The remainder of the cost will be borne from Fair revenue.



STATE FAIR EVENTS &amp; EXHIBIT BUILDING - RALEIGH, N.C.

HAYES - HOWELL &amp; ASSOC ARCHITECTS





WILLIAM G. PARHAM, JR.  
assistant commissioner

*office of agribusiness  
and public services*

food distribution

markets

museum

research stations

soil testing

statistics



## PERSONNEL

### Office of Agribusiness And Public Services

#### FOOD DISTRIBUTION

JAY P. DAVIS, JR.	Commodity Distribution Director
SAMUEL T. AVERA	Commodity Distribution Representative
LINDA G. BARNETT	Accounting Clerk I
WILLIAM B. CASH	Stock Clerk II
RAYMOND M. CHADWICK	Stock Clerk II
WILLARD B. COBB, JR.	Commodity Distribution Representative
RALEIGH T. DANIEL	Commodity Distribution Assistant Director
GLADYS R. DUDLEY	Stenographer III
ROBERT B. DUNN	Administrative Officer I
CLAUDE L. EDWARDS	Stock Clerk II
ROBERT B. GODWIN	Commodity Distribution Representative
CATHERINE S. HOLDEN	Typist II
DON M. HONEYCUTT	Stock Clerk II
JAMES M. HUNTER, JR.	Warehouse Manager I
BARBARA F. KING	Stenographer II
CECIL L. MORRIS	Warehouse Manager I
JERRY M. NARRON	Commodity Distribution Representative
GERALDINE P. PEARCE	Accounting Clerk II
MARY L. PINKHAM	Commodity Distribution Nutritionist
CLARENCE RIGGSBEE	Heavy Truck Driver
NELLIE M. SANDERS	Accounting Clerk II
WALTER M. SAWYER	Administrative Officer I
ROBERT P. SELMAN	Warehouse Manager I
BEN L. STANFIEL	Commodity Distribution Representative
MELBA T. WESTER	Accounting Clerk II

#### MARKETS

CURTIS F. TARLETON	Director of Agricultural Marketing
DIANE S. BAKER	Stenographer II
WILBUR S. BRANNAN	Marketing Specialist III
RUBY P. BRITT	Stenographer III
MILDRED G. BRYAN	Stenographer III
JESSIE T. BUNN	Marketing Specialist III
CHARLES L. CAMPBELL, JR.	Marketing Specialist IV
EUGENE E. CARROLL, JR.	Marketing Specialist III
SHIRLEY T. COATS	Stenographer III
JOHN H. CYRUS	Marketing Services Coordinator
LINDA L. DAVIS	Stenographer II
GROVER H. DEAN	Meat Grader Supervisor
ESTHER P. DUNCAN	Stenographer II
CHARLES D. EDWARDS	Marketing Services Coordinator
CHARLES B. ELKS	Marketing Specialist V
BILLIE A. FULLER	Stenographer III
THERESA D. HAILEY	Stenographer II
NORWOOD O. HARGROVE	Marketing Specialist III
ELAINE J. HARVELL	Marketing Specialist III
GLEN C. HATCHER, SR.	Agricultural Engineer II



JAMES F. HOCKADAY, JR.	Marketing Specialist IV
SPURGEON V. HYDER	Marketing Specialist III
JULIUS P. JENNETTE	Marketing Specialist IV
WALLACE G. JOHNSON	Marketing Specialist IV
JEWELL M. KELLEY	Typist I
HENRY S. KENNETT	Marketing Specialist III
ETHEL Y. KIKER	Marketing Specialist III
CHARLES B. KING, JR.	Agricultural Engineer I
KATHERINE B. KOPPEN	Administrative Secretary
WILLIAM E. LANE	Marketing Specialist IV
BRYANT C. LANGSTON, JR.	Marketing Specialist IV
GLENN N. LILLEY, JR.	Marketing Specialist III
STALEY S. LONG, JR.	Marketing Specialist III
HUGH B. MARTIN	Marketing Specialist IV
CHARLES I. MILLER, JR.	Marketing Specialist III
NEILL A. MORRISON, JR.	Marketing Specialist IV
CLAUDE L. NELSON	Marketing Specialist II
ARVID T. PEAK	Marketing Specialist III
GLENN T. PETTY	Marketing Specialist III
LOIS M. PLEASANTS	Draftsman II
H. D. QUESSENBERRY	Marketing Specialist IV
SAMUEL G. RAND	Marketing Specialist IV
LARRY B. SEAL	Marketing Specialist III
ELLIS B. SHANDS	Marketing Specialist III
NOLAN D. SMITH, JR.	Agricultural Engineer Trainee
CHARLES H. STAMEY	Marketing Specialist II
ANNIE R. STRICKLAND	Stenographer II
ELIZABETH L. TAYLOR	Stenographer III
LARRY E. TETTERTON	Marketing Service Coordinator
EURIS R. VANDERFORD	Marketing Specialist III
DAVID S. WALKER	Agricultural Engineer I
JAMES M. WARREN	Marketing Specialist III
DANIEL E. WESTER	Marketing Specialist III
JEARLEAN O. WILSON	Stenographer II

## COOPERATIVE INSPECTION SERVICE

EUGENE G. BONEY, JR.	Marketing Specialist III
BOBBY G. BYRD	Meat Grader
LARRY S. DEAL	Marketing Specialist III
WILLIAM A. EDMONDSON	Marketing Specialist III
ROLAND E. HILL	Meat Grader
VALLIE L. HOLDER	Stenographer III
NORMAN L. MCIVER	Marketing Specialist I
HELEN J. PARRISH	Accounting Clerk II
KENNETH L. PERRY	Marketing Specialist II
SHIRLEY H. ROGERS	Accounting Clerk II
LABIN T. WOODLIEF	Meat Grader

## EGG INSPECTION

BOBBY G. AUSTELL	Marketing Specialist I
GUY A. CUTLER	Marketing Specialist IV
GEORGE E. INGRAM	Marketing Specialist I
WILSON T. LEGGETT	Marketing Specialist I
WILLIAM H. MCCULLEN	Marketing Specialist I
ARTHUR C. MCCURRY	Marketing Specialist I
JOSEPHINE H. RUDDOCK	Stenographer II
ELVIS C. WALL	Marketing Specialist I

## MUSEUM OF NATURAL HISTORY

WILLIAM L. HAMNETT	<i>Museum of Natural History Director</i>
LUDIE V. ASHE	<i>Housekeeping Assistant Light</i>
ROBERT M. DOWNS	<i>Natural Science Museum Curator II</i>
HEZEKIAH GOODSON	<i>Housekeeping Assistant</i>
GRACE R. JOHN	<i>Stenographer II</i>
EXCELL J. PHARR	<i>Messenger</i>
ROWLAND M. SHELLEY	<i>Natural Science Museum Curator II</i>
RENALDO G. KUHLE	<i>Natural Science Museum Curator I</i>
CHARLES H. LEIBRANDT	<i>Taxidermist</i>
WILLIAM M. PALMER	<i>Natural Science Museum Curator II</i>
SARAH D. PRINCE	<i>Clerk II</i>
BETTY R. SMITH	<i>Natural Science Museum Curator I</i>
EUGENE T. UPCHURCH	<i>Natural Science Museum Curator II</i>
JAMES F. VESTER	<i>Cabinetmaker</i>
MARY M. WEATHERS	<i>Stenographer I</i>

## RESEARCH STATIONS

PATON H. KELLEY	<i>Agricultural Research Station Director</i>
ELWOOD A. ALLEN	<i>Maintenance Mechanic II</i>
GRAHAM E. ALLEN	<i>Farm Worker</i>
WILLIAM H. ARMWOOD	<i>Farm Worker</i>
JOSEPH H. ARRINGTON	<i>Farm Foreman II</i>
EDWARD R. ASKEW	<i>Agricultural Research Technician I</i>
EMMETT K. ATWOOD	<i>Farm Foreman II</i>
BILLY N. AYSUE	<i>Farm Superintendent II</i>
WARREN H. BAILEY	<i>Farm Superintendent III</i>
WALLACE R. BAKER, JR.	<i>Farm Superintendent II</i>
ROBERT K. BARKLEY	<i>Agricultural Research Assistant</i>
LINWOOD BAZEMORE, JR.	<i>Farm Worker</i>
GEORGE D. BETTS	<i>Farm Worker</i>
PERCY L. BRASWELL	<i>Farm Worker</i>
GENE BRITT	<i>Agricultural Research Technician I</i>
WILLIAM K. BROCK	<i>Agricultural Research Technician I</i>
ALICE F. BURCHFIELD	<i>Stenographer II</i>
THEODORE R. BURLSON, JR.	<i>Agricultural Research Technician II</i>
CONNIE R. CAMPBELL	<i>Agricultural Research Technician II</i>
JAMES A. CHESON	<i>Laborer</i>
JAMES W. COMSTOCK	<i>Agricultural Research Assistant</i>
GEORGE E. COWAN	<i>Farm Worker</i>
GWENDOLYN K. COX	<i>Typist II</i>
HARVEY R. CROUSE	<i>Maintenance Mechanic I</i>
RUFUS CURTIS	<i>Livestock Man</i>
BERNARD R. DANIEL	<i>Maintenance Mechanic I</i>
AVERY J. DAVIS, JR.	<i>Farm Worker</i>
TOMMY H. DAVIS, III	<i>Farm Worker</i>
WALLACE J. DICKENS	<i>Farm Superintendent II</i>
JAMES R. EDWARDS	<i>Farm Superintendent III</i>
ROGER D. EVANS	<i>Farm Worker</i>
JAMES J. FLETCHER	<i>Dairyman</i>
ROGER D. GARR	<i>Farm Worker</i>
JAMES W. GEORGE	<i>Agricultural Research Assistant</i>
BILLY J. GREENE	<i>Farm Worker</i>
DAVID S. GRIFFIN	<i>Administrative Officer II</i>
CARL E. HAAS	<i>Agricultural Research Assistant</i>
GILBERT E. HALL, JR.	<i>Farm Foreman II</i>
BERNICE H. HARRELL	<i>Stenographer II</i>
GARFIELD HARRIS	<i>Farm Foreman II</i>
HIRAM HAWKINS	<i>Laborer</i>
ALICE J. HONEYCUTT	<i>Stenographer III</i>

HORACE G. HUDSON	General Utility Man
CRAWFORD L. HUNT	Laborer
JIMMY R. JOINES	Agricultural Research Assistant
FREDDIE M. JONES	Farm Worker
MERLE R. KING	Agricultural Research Technician II
MOODY KNIGHT	Farm Worker
DANNY B. LAMBERT	Laborer
RUTH O. LANE	Typist II
JAMES E. LEE	Farm Worker
ANNE Y. LENTZ	Stenographer II
ROBERT A. LEWIS	Farm Foreman II
CHARLES H. LUTON	Farm Foreman II
CHARLES W. LYONS	Laborer
WILLIE L. MCCADEN	Laborer
WILSON C. MCCADEN	Farm Worker
HAYES L. MCCLURE	Farm Foreman II
CASPER D. McLAMB	Maintenance Mechanic I
CLYDE Z. MCSWAIN, JR.	Farm Superintendent III
PATRICIA C. MITCHELL	Stenographer II
JESSIE W. MORRIS	Farm Worker
LONNIE MOSBY, JR.	Agricultural Research Assistant
LENA M. NEAVES	Stenographer II
MELVIN L. OLIVER	Farm Worker
HENRY F. PEOPLE	Farm Worker
THOMAS E. PERRY	Farm Foreman II
ROBERT O. PETERSON	Farm Equipment Operator
GEORGE PETTIFORD	Farm Worker
DALBERT K. PITTER	Farm Worker
BEN D. RACKLEY	Farm Worker
FRANCE D. RAY	Farm Worker
CHARLES G. REAGAN	Farm Worker
OLIVER RICE	Livestock Man
LEROY RICH	Farm Worker
ALVIN W. RIVENBARK	Livestock Man (Dairyman)
JOHN D. ROTEN	Agricultural Research Assistant
CLAUDE S. ROUPE	Farm Worker
JOHN SASSER, JR.	Farm Foreman II
GEORGE SEVERT	Farm Worker
JULIA L. SKINNER	Typist II
HOMER G. SMITH	Livestock Man
JOHN W. SMITH	Farm Superintendent II
THILBERT A. SUGGS	Agricultural Research Technician I
JESSE W. SUMNER	Farm Superintendent II
HENRY M. TALLARDY	Clerk II
EDGAR G. TATUM	Farm Foreman II
DAN LAFAYETTE TAYLOR	Agricultural Research Technician I
JAMES C. TAYLOR	Farm Foreman II
RAYMOND E. TEW	Farm Worker
JOHN H. THOMAS	Maintenance Mechanic I
LEVY C. TODD	Farm Worker
SAMMY L. TUCKER	Farm Worker
DANA F. TUGMAN	Farm Superintendent II
KATHERINE S. WATERS	Typist II
LLOYD WATSON	Farm Worker
RANDOLPH WHITLEY	Agricultural Research Technician I
JAMES F. WILLIAMS	Farm Worker



## SOIL TESTING

DONALD W. EADDY	Soil Testing Director
SHIRLEY S. BOWLING	Agricultural Chemist
MURPHY H. CAIN	Laboratory Helper
CAROLYN O. COPELAND	Analytical Chemist I
RAMONA G. DIGH	Laboratory Technician
JOANN C. EIDENBERGER	Key Punch Operator II
WANDA K. ELAYADI	Typist II
ALBERT L. HATFIELD	Agronomist II
AUDREY H. HAYES	Clerk II
CAROLYN C. HOLT	Stenographer III
VIOLET R. HUMPHRIES	Laboratory Technician
SARAH P. JOHNSON	Agricultural Chemist
RUTH B. LEWIS	Agricultural Chemist
JUANITA U. MATTHEWS	Agricultural Chemist
JANET P. PRIVETTE	Key Punch Operator II
ROGER E. SUGG	Agronomist I
PEGGY J. SWINSON	Stenographer II
PAULINE N. WILDER	Agricultural Chemist
SUE P. WILLIAMS	Agricultural Chemist

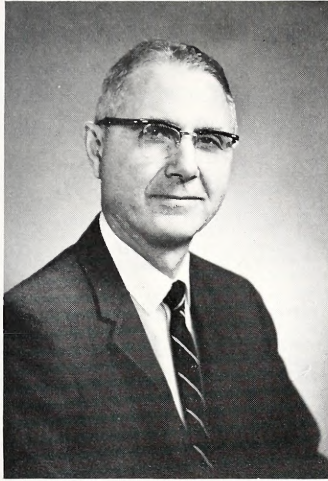
## CROP STATISTICS

RAYMOND R. ALFORD, JR.	Office Machine Operator Supervisor
MARY S. ALLEN	Statistical Analyst II
BETTY P. BAKER	Statistical Aide
PHYLLIS L. BOYKIN	Key Punch Operator II
GEORGIE T. BYNUM	Statistical Aide
CAROLYN R. COX	Public Information Assistant
CHARLIE H. CROSS, JR.	Duplicating Unit Supervisor I
MARTHA F. EARLY	Statistical Analyst III
EVELYN L. FINCH	Vari-Type Operator III
KATHRYN H. HICKS	Key Punch Operator II
WILLIAM C. HINSON, JR.	Agricultural Statistician
JEWELL B. HUSSEY	Statistical Analyst I
IDA L. KING	Statistical Aide
MINNIE H. LANGLEY	Vari-Type Operator III
WAYNE S. LEARY	Farm Census Supervisor
FLORINE C. LEONARD	Statistical Aide
JAMES W. LINEBERGER, JR.	Computer Programmer II
JULIAN K. MATTHEWS	Duplicating Equipment Operator II
MARY D. MATTHEWS	Statistical Analyst I
ANNE L. RIKER	Key Punch Operator II
NATALIE R. SHEARIN	Statistical Aide
LARRY E. SNIPES	Statistician (Agriculture) GG

## STATE WAREHOUSE FUND

WILLIAM G. PARHAM, JR.	Warehouse System Superintendent
CLIFFORD J. MCNEILL, JR.	Warehouse Examiner
FRANCES L. O'NEAL	Stenographer III
MARILYN M. PATE	Typist II





## FOOD DISTRIBUTION

JAY P. DAVIS

*Director*

Two hundred million pounds of food were distributed by this division during the biennium. The wholesale value of food distributed was 72.5 million dollars. The number of persons in the state benefiting from the use of donated foods was 1,134,001.

The Food Distribution Division, in cooperation with the United States Department of Agriculture, administers the Food Distribution Program in this state, and it is through this program that foods are received for distribution to eligible groups within the state. The division has the responsibility for requisitioning, storing, transporting, and distributing foods to all eligible groups in the state. Eligible groups include school lunchrooms, serving meals to children of high school grade or under; charitable institutions, such as state mental hospitals; correctional and rehabilitation institutions, sanatoriums, orphanages; non-profit day care centers; summer camps for boys and girls; and needy families. Such food is also available for use in the event of disasters.

Foods distributed under the program are acquired by the U.S. Department of Agriculture under its price-support, surplus removal, school lunch, and other food supply programs. In recent years, emphasis has shifted from the price-support aspect of the program to that of supplying foods to help meet the nutritional requirements of eligible groups.

Within the framework of applicable federal legislation and regulations, this division develops and implements policies, procedures, and regulations governing the operation of the program within the state.

**Groups Eligible To Receive USDA Donated Foods** — In the following paragraphs, we are giving a brief explanation of the groups of eligible recipients and the plan of operation which we use to supply food to each group.

**School Lunchrooms** — The Food Distribution Program is a very important component of the National School Lunch Program, under which nutritious meals are made available to students at a very reasonable cost. The 28 million dollars' worth of foods distributed to lunchrooms during the biennium furnished approximately one-fourth of the total food requirement of the lunchrooms, thus enabling them to serve well-balanced meals to children at a cost of 35-45 cents, which is only a fraction of the value of the lunch. Federal, state, and local funds make up almost fifty percent of the cost of the lunch—with the 35-45 cents paid by the child making up the difference. The contribution of donated foods to lunchrooms also assists the lunchroom financially so that free and reduced priced meals can be served to those children whose families are economically unable to pay the full lunch charge. Schools participating in the National School Lunch Program are required to serve lunches that consist of a minimum of two ounces of meat or protein substitute, three-fourth cup of vegetables or fruit and vegetables, one-half pint of whole milk, bread and butter or fortified margarine. The lunchrooms, of course, must buy approximately three-fourths of their total requirement of food locally and these purchases represent a very considerable market for our local farmers, processors, and businesses. During the past two years, lunchrooms purchased locally approximately 83 million dollars' worth of food.

**Charitable Institutions** — Donated foods are made available to charitable institutions to enable them to improve the quality of meals served to patients and residents. The financial value of the foods also assists in the cost of meals for the patients who are

unable to pay the charge for services provided. Recipient institutions are required to maintain the normal expenditures for food and to use the donated foods so as to improve the meals rather than substituting USDA donated foods for foods normally purchased.

**Child Care and Development Centers** — Increased emphasis has been given to providing nutritious food for such facilities as head start programs and child care centers. The variety and quantity of foods available for use in such institutions has increased and our division has made a special effort to assure that such foods are made available to such centers. Storage and transportation is a problem with such centers since many of them are relatively small, serving between 20 and 50 children. Child care centers which serve children of low-income families and of working mothers are eligible to participate in the program. Other centers which serve some or all of the children free or at a nominal charge are also eligible.

**Summer Camps** — During the summer months, we provided USDA donated foods to summer camps for boys and girls to help assure nutritious, adequate meals. Such camps, to be eligible, must be operated on a non-profit basis and serving children of high school grade and under. Eligible camps include the FFA camps, 4-H camps, camps operated by church and civic groups, boy scout and girl scout camps, and other non-profit groups. Camps operate over varying periods of time, extending from one or two weeks to the entire summer.

**Needy Families** — During the past several years, and particularly during the biennium, there has been a tremendous increase in emphasis on the foods supplied to meet the nutritional requirements of low-income families. The number and variety of foods has more than doubled, with the latest retail value of foods reaching approximately \$17.00 per person per month. This compares with a retail value of \$6.00 per person per month for foods which were being distributed ten years earlier. The 24 different foods being distributed during the biennium will, if properly used, furnish almost 100 percent of the daily nutritional requirements of a family. It is, of course, advisable that the family supplement the foods received with such items as fresh vegetables and fresh meats, either grown or purchased by the family. The phase of the program dealing with needy families is administered in cooperation with the boards of county commissioners in each county. The county social services departments



receive applications and determine eligibility of the families applying for participation in the food program. At the close of the biennium, all one hundred counties in North Carolina were operating a food program for needy families.

Using the Food Distribution Handbook, issued by the Food Distribution Division, the county departments of social services use the following criteria in determining eligibility of families:

- (1) Families are eligible if they are receiving Public Assistance Payments under one of the following Social Security categories:
  - a. Old Age Assistance
  - b. Aid to Families with Dependent Children
  - c. Aid to the Permanently and Totally Disabled
  - d. Aid to the Blind
- (2) Other needy families are eligible if they have an income of less than the following amounts:
 

Family of one person .....	\$130.00 per month
Family of two persons .....	170.00 per month
Family of three persons .....	215.00 per month
Etc.	

The second group listed above includes many low-income families such as seasonal farm workers, part-time laborers, day laborers, and other persons engaged in low-paying or part-time work.

**Supplemental Food Program** — Under this program an effort is made to improve the nutrition of high-risk groups. These groups are defined as: Expectant and nursing mothers and infants. Special allocations of high protein foods are provided. This program is operated with the cooperation of the county department of health. The county health departments may certify for the supplemental foods any mothers or infants whom they find to be in need of additional food for medical or health reasons. No family income requirement is used other than that health departments may certify only those families whom they would certify for other county health department services. This program is an effort to assure the physical and mental development of the child during early stages of life. Medical science has recently shown that a good supply of food, especially protein-rich foods, is essential if the body, particularly the brain of a child, is to develop normally. At the end of June 1972, 28 counties were participating in the program with applications from other counties being processed.



**Disaster and Emergency Feeding** — The Food Distribution Division has a major responsibility for providing food during disasters resulting from flood, fire, freeze, earthquake, tornado, hurricane, landslide, explosion, or other causes. Victims of such disasters have first priority in the use of USDA donated foods. Our division makes every effort to meet their food needs promptly. The food which we have available in school lunchrooms, institutions, and state warehouses is available for use in emergencies, also the facilities of school lunchrooms and other cooperating agencies to be able to prepare and serve the meals to disaster victims. During the biennium, no major scale disasters have occurred which have necessitated disaster and emergency feeding. If such disasters do occur in the future, we have the plan and means to provide food needs during such emergencies.

**Transportation and Warehousing** — The department leases and operates state warehouses at Asheville, Salisbury, and Butner which provide a minimum amount of storage for the program. The majority of the foods which are distributed to schools are shipped from the processing plant or government storage directly to strategic points throughout the state. From these points, distribution is made from the freight car door or truck to recipient agencies. Each school unit provides a truck for hauling the foods from the unloading point to the school storages. The three state warehouses are utilized chiefly for receiving, storing, and re-shipping foods to the county distribution centers which serve needy families and all of the institutions, except for a few very large ones. It appears to be essential that we expand our state warehouse facilities so that we might receive, store, and distribute a major portion of the foods which are distributed to schools. Currently, only emergency shipments of food are supplied from the state warehouses to school units. The regular shipments which are made on a quarterly or annual basis move directly to the schools from the vendor or government storage.

**Financing** — Cost of the program is borne jointly by federal, state, and county governments. The donated foods are made available to the state without charge. The storage, transportation, and distribution within the state, however, is borne chiefly by the state and county agencies. State funds pay for the rent and operation of the state warehouses and for the transportation of foods from the state warehouses to county distribution centers. State funds are also distributed to counties to pay approximately one-half of

the cost of storing and distributing of food to needy families at the county level. Federal funds are also used to improve and expand the distribution of foods to needy families.

**Statistical Summary** — Information regarding value of USDA donated foods received in the state and the quantity distributed to each county is given in the following summary. This information is given in answer to many inquiries received from various individuals in the state as well as from members of Congress.

### VALUE OF USDA DONATED FOODS DISTRIBUTED

1970-72 Biennium

<i>County</i>		<i>Schools</i>	<i>*Charitable Institutions</i>	<i>Needy Families</i>	<i>Total</i>
Alamance .....	\$	502,273	\$ 9,445	\$ 165,515	\$ 677,233
Alexander .....		99,167	11	237,965	337,143
Alleghany .....		54,255	3,574	254,734	312,563
Anson .....		141,300	654	—	141,954
Ashe .....		110,332	226	429,939	540,497
Avery .....		82,124	3,048	440,085	525,257
Beaufort .....		236,028	5,182	614,389	855,599
Bertie .....		134,279	1,593	—	135,872
Bladen .....		180,630	3,431	—	184,061
Brunswick .....		124,766	427	—	125,193
Buncombe .....		754,455	55,195	1,785,737	2,595,387
Burke .....		334,526	125,174	26,575	486,275
Cabarrus .....		461,223	13,884	—	475,107
Caldwell .....		326,147	4,226	401,397	731,770
Camden .....		36,652	—	112,348	149,000
Carteret .....		159,798	1,352	450,485	611,635
Caswell .....		119,897	770	591,305	711,972
Catawba .....		577,176	2,533	—	579,709
Chatham .....		181,262	2,542	—	183,804
Cherokee .....		92,555	—	396,727	489,282
Chowan .....		76,175	—	49,572	125,747
Clay .....		36,314	888	241,798	279,000
Cleveland .....		458,437	1,014	—	459,451
Columbus .....		345,017	11,338	—	356,355
Craven .....		268,397	2,287	1,281,885	1,552,569
Cumberland .....		1,150,218	11,043	3,171,038	4,332,299
Currituck .....		37,802	545	125,539	163,886
Dare .....		33,586	—	—	33,586
Davidson .....		523,448	7,037	627,781	1,158,266

<i>County</i>	<i>Schools</i>	<i>*Charitable Institutions</i>	<i>**Needy Families</i>	<i>Total</i>
Davie .....	119,336	—	—	119,336
Duplin .....	238,513	9,560	845,897	1,093,970
Durham .....	664,049	24,290	—	688,339
Edgecombe .....	269,497	45	—	269,542
Forsyth .....	1,099,977	40,916	—	1,140,893
Franklin .....	143,832	58	—	143,890
Gaston .....	772,979	9,702	1,549,112	2,331,793
Gates .....	56,973	56	337,076	394,105
Graham .....	37,005	14	184,004	221,023
Granville .....	199,376	95,082	—	294,458
Greene .....	99,876	1,871	—	101,747
Guilford .....	1,306,045	37,894	3,496,029	4,839,968
Halifax .....	355,399	39	130,477	485,915
Harnett .....	284,071	333	—	284,404
Haywood .....	242,037	4,240	895,123	1,141,400
Henderson .....	221,790	10,871	402,687	635,348
Hertford .....	123,996	21	1,222,169	1,346,186
Hoke .....	128,828	34,540	565,062	728,430
Hyde .....	34,045	1,077	483,603	518,725
Iredell .....	393,669	6,485	—	400,154
Jackson .....	100,675	439	412,487	513,601
Johnston .....	365,013	5,113	—	370,126
Jones .....	71,856	—	725,597	797,453
Lee .....	178,095	1,248	—	179,343
Lenoir .....	311,715	92,840	—	404,555
Lincoln .....	190,539	687	—	191,226
Macon .....	108,664	722	285,330	394,716
Madison .....	81,894	—	876,632	958,526
Martin .....	164,032	11,807	—	175,839
McDowell .....	161,438	2,468	—	163,906
Mecklenburg .....	1,722,954	59,388	5,993,080	7,775,422
Mitchell .....	79,807	161	646,498	726,466
Montgomery .....	142,769	157	—	142,926
Moore .....	198,217	18,458	—	216,675
Nash .....	423,737	12,801	—	436,538
New Hanover .....	377,930	2,908	—	380,838
Northampton .....	170,255	19	52,514	222,788
Onslow .....	326,206	2,839	595,740	924,785



<i>County</i>	<i>Schools</i>	<i>*Charitable Institutions</i>	<i>**Needy Families</i>	<i>Total</i>
Orange .....	224,477	18,623	128,664	371,764
Pamlico .....	60,056	3,091	251,642	314,789
Pasquotank .....	125,896	—	594,596	720,492
Pender .....	122,262	2,353	497,759	622,374
Perquimans .....	46,501	—	336,331	382,832
Person .....	176,759	474	—	177,233
Pitt .....	391,850	4,500	—	396,350
Polk .....	60,169	2,080	—	62,249
Randolph .....	401,529	—	420,650	822,179
Richmond .....	197,040	29,828	—	226,868
Robeson .....	674,526	6,120	—	680,646
Rockingham .....	409,734	3,589	—	413,323
Rowan .....	449,445	3,960	763,172	1,216,577
Rutherford .....	265,838	22,706	583,943	872,487
Sampson .....	318,399	1,428	33,409	353,236
Scotland .....	172,705	17,247	—	189,952
Stanly .....	255,925	1,912	—	257,837
Stokes .....	132,898	4,532	329,747	467,177
Surry .....	314,674	3,312	—	317,986
Swain .....	38,555	4,654	387,458	430,667
Transylvania .....	105,667	3,764	177,563	286,994
Tyrrell .....	30,099	1,027	205,992	237,118
Union .....	337,624	3,074	—	340,698
Vance .....	206,787	1,160	—	207,947
Wake .....	1,169,784	572,016	3,425,467	5,167,267
Warren .....	116,668	6,348	—	123,016
Washington .....	97,157	—	730,482	827,639
Watauga .....	108,788	4,511	52,901	166,200
Wayne .....	514,589	169,977	14,398	698,964
Wilkes .....	274,428	2,033	834,558	1,111,019
Wilson .....	311,759	10,852	1,447,639	1,770,250
Yadkin .....	146,039	—	254,892	400,931
Yancey .....	75,986	611	427,817	504,414
TOTALS .....	\$27,939,941	\$ 1,662,350	\$43,003,011	\$72,605,302
			Inv. Adj. —	101,673
				\$72,503,629

\*Includes Summer Camps and Child Development Centers

\*\*Includes Supplemental Food Program



**SUMMARY OF USDA DONATED FOODS DISTRIBUTED**  
1970-72 BIENNium

<i>Recipient Agency</i>	<i>No. of Agencies</i>		<i>No. of Persons Served</i>		<i>Foods Distributed</i>	
	1970-71	1971-72	1970-71	1971-72	Quantity (lbs.)	Value**
Schools—Head Start	2,053	2,069	882,461	884,179	91,390,799	\$28,062,664
Summer School Programs	266	256	16,784	32,281		
Institutions	255	281	32,981	34,586	5,337,036	1,327,531
Summer Playground Programs	—	54	—	8,430		
Needy Families—Including Supplemental Food Program	56	56	152,149*	132,658*	106,523,237	43,012,731
Summer Camps	119	128	49,626	38,739	339,575	100,703
<b>TOTALS</b>	<b>2,749</b>	<b>2,844</b>	<b>1,134,001</b>	<b>1,130,873</b>	<b>203,590,647</b>	<b>\$72,503,629</b>

\*Participation Figures are for March 1971 and February 1972.

\*\*Wholesale Except For Needy Families Where Retail Value Is Used.



## MARKETS DIVISION

CURTIS F. TARLETON

*Director*

As a marketing service agency primarily but also charged with specific regulatory responsibilities, the Division of Markets strives to "serve the producer while protecting the consumer".

Our service work takes many forms and involves a variety of activities, all of which are intended to increase efficiency in the marketing of farm products. Requests for these services reached a new high during the 1970-72 biennium as farmers were again faced with rising production costs. While our staff of experienced specialists were able to render direct assistance in response to many of these requests, it was necessary to again utilize mass communication media, group meetings and specially prepared materials to get needed and helpful information to producers, as well as to other market interests.

We are grateful for the fact that we were adequately staffed during the biennium to respond to requested service needs with a



minimum of delay. However, we were not able to perform our regulatory responsibilities to the extent needed because of lack of personnel assigned to this work. This was true in administering the N. C. Egg Law, Handlers Act and the Farm Products Branding Law. Our budget request for the 1973-75 biennium includes minimum needs for carrying on the regulatory work of the division.

A summary of the division's activities during 1970-72 follows:



Determining and designating the official grade of farm products is one of the primary responsibilities of the Markets Division.

### LIVESTOCK (Market Development)

Livestock, which is an excellent enterprise for increasing farm income both in part-time and full-time farming operations, has become one of the major sources of farm income in North Carolina. This state now ranks eleventh in pork production and is becoming more important each year in the production of feeder cattle.

To provide market service assistance to the state's livestock industry during the biennium, division specialists strived to help all segments of the industry. For producers, this meant buying or selling by private treaty or collectively in special pools or sales. For the livestock auction market, it meant planning sales, consigning livestock, grading and grouping for sales, contacting buyers and assisting with sales. For packers and producers, it meant procurement of livestock for slaughter.

FEEDER PIGS  
GRADED QUALITY SALES

<i>Place of Sale</i>	<i>Total Head Marketed During Biennium</i>
Hillsborough .....	57,358
Greensboro .....	60,573
Fayetteville .....	38,141
Wallace, Chadbourn .....	113,403
Norwood .....	32,331
Statesville .....	61,801
Rich Square .....	18,386
Asheville .....	5,906
Total .....	387,899

NON-GRADED QUALITY SALES

Rocky Mount and Dunn .....	367,600
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GRADED MARKET HOG SALES

<i>Place of Sale</i>	<i>No. of Sales</i>	<i>No. of Head</i>
Greenville .....	100	37,321
Swan Quarter .....	53	24,135
Monroe .....	102	49,598
Roxboro .....	45	16,581
Total .....	300	127,635

During this biennium swine marketing took on a whole new perspective. Feeder pigs, for example, now are sold to feed-lot operators in North Carolina and several other states without the buyer's appraisal before they buy. This is done by means of a telephone auction, and on the basis of the respect buyers have for the grades applied to the pigs by our specialists. In 1970-1972 a total of 339 graded quality feeder pig sales were held at eight locations in which 387,899 pigs were sold to feed-lots in eight states. Value of these pigs was in excess of \$12 million. The effect of the graded sales can be multiplied many times because prices paid at the sales influenced prices farmers received for pigs sold on their farms.

Since June 1970 swine marketing specialists have assisted farmers in marketing 127,635 market hogs on a grade basis. This



method of marketing was established through the cooperation of the North Carolina Farm Bureau. In July 1970 grading was being done at three locations and a fourth location was added at Roxboro in October of that year. Grading is proving to be a necessary tool for the improvement of hogs throughout this state.

Swine marketing specialists served as official judges for fourteen North Carolina Junior Livestock Shows during the biennium and assisted at seven other junior shows. Eight Junior Livestock Judging Contests were conducted for 4-H and F.F.A. members. Efforts being spent at these shows are aimed at improving market hogs and developing swine producers for tomorrow.

Our swine specialists have worked in conjunction with the North Carolina Pork Producers' Association to promote purebred sales, feeder pig sales, market hog shows and carcass events. Joint demonstrations were held to show consumers and producers the correlation between live hogs and pork cuts.

Through the efforts of these specialists, the market for breeding stock has been expanded beyond the boundaries of our country. Several North Carolina produced hogs have found their way to homes in several foreign countries, with other export orders in the making for other countries abroad.

More than 300 farmers were assisted in purchasing herd boars and replacement gilts in an effort to improve the quality of pigs and hogs being marketed in North Carolina. Purebred breeders were assisted in holding 22 private sales, 9 state sales, 2 all-breed sales and 2 national type conference sales.

Events such as swine shows, fairs, grading demonstrations, conferences, tours, field days, and other educational meetings were conducted by or participated in by our specialists. Efforts were concentrated on improving quality and expanding markets for North Carolina grown pigs and pork.

There was a noticeable increase in feeder calf production in North Carolina during the biennium. And with this came an increase in demand for our feeder calves and feeder cattle, both yearling steers and spring stockers over a much wider area of the country. North Carolina feeder cattle brought the highest prices in the fall of 1971 and spring of 1972 since the special graded sales were started in the early 1950's.

During the biennium, our specialists in cooperation with the N. C. Cattlemen's Association, Extension livestock specialists, and the North Carolina Feeder Cattle Committee, scheduled 80 special feeder cattle sales, selling 85,398 head of feeder calves, yearling steers and spring stocker cattle for \$15,038,324.56.

<i>Kind of Sale</i>	<i>No. of Sales</i>	<i>No. of Head</i>	<i>Total Dollars</i>
Feeder Calf . . . . .	43	43,430	\$ 6,658,089.20
Yearling Steers . . .	22	26,752	5,575,459.71
Spring Stockers . . .	15	15,216	2,804,775.65
Total . . . . .	80	85,398	\$ 15,038,324.56

This is the first biennium that total numbers of cattle did not show a material increase; yet total dollars increased. Prices were good and more contracting or direct sales were made than usual. The volume in state graded sales has attracted buyers from midwestern, northwestern and southeastern points of the United States, and they have done some country buying to their advantage, but this tends to happen on a rising market.

Specialists assisted livestock markets with eight graded sales during the biennium that were not included in the special state sponsored sales, selling over 6,000 cattle. Over 25,000 cattle were inspected on farms and advised as to how and when to market. Feeders were helped in selling 1,665 fat cattle direct to packing plants. More cattle feeders are shifting to grain on grass finishing and silage to reduce feed costs.

Specialists assisted with 53 purebred cattle sales, grading, judging, etc., but more important, helping producers pick breeding stock, bulls and females to help improve the quality of our commercial cattle. The production of quality feeder cattle is the real future of the beef cattle business in North Carolina. We definitely have a good feeder cattle marketing program.

Sheep numbers continued to decline during this period. The lack of numbers creates definite marketing problems. During this biennium, 10 lamb pools were held, selling 2,964 sheep and lambs, for a total of \$70,835. The lambs were graded and sold to packers outside the state, with one packing company in the state killing a limited number, mostly off season lambs. During 1971 a cooperative was formed among Virginia, West Virginia and North Carolina interests to grade on farms and market lambs by telephone auction. This is helping a few large producers and has helped the price farmers receive for lambs.

Four wool pools were sold during the biennium, involving 160,025 pounds, which sold for \$58,157. The wool was offered for sale on a bid basis and collected and classed by personnel of the section, working with North Carolina State University Extension personnel.

A total of 920 replacement ewes and 16 purebred rams were purchased and placed with producers. A properly managed flock of sheep is still a very profitable livestock enterprise. The trend is toward larger flocks, with the small farm flock of 10 to 20 ewes going out.

One specialist of this section was assigned to serve as Horse Specialist on a part-time basis. Among the main activities he carried out were conducting the 1971 Horse and Pony Survey, organizing the N. C. Department of Agriculture Horse Advisory Committee, writing a promotion booklet in cooperation with the Department of Natural and Economic Resources, serving on the Program Committee for the N. C. State University Horse Science Conference, organizing the North Carolina Horse Council as well as serving as an ex-officio director for this council.

Considerable time was devoted to the different horse shows and breed organizations throughout the state that were planning improvement of facilities for special horse events. As superintendent of the 1972 N. C. State Fair Horse Show, he helped reorganize and set up the event with new facilities and prospects for the most outstanding horse show ever held at the North Carolina State Fair. He also organized a Horse Show Committee composed of individuals from across the state representing the various breeds of horses and ponies to serve the State Fair show. He is serving as manager and co-chairman for the 1972 Southern States Morgan Horse Show which will host approximately 250 horses from 15 states here in North Carolina. He has also assisted North Carolina State University by serving as a judge for various 4-H horse demonstrations and shows.

#### LIVESTOCK (Grading and Regulatory)

This section is responsible for certifying the quality and cutability grade of beef, veal and lamb, and denoting the official federal grades on these products.

Working through a cooperative agreement between the North Carolina and U. S. Departments of Agriculture, four state specialists, licensed as USDA Meat Graders, graded carcass beef, veal and lamb in 9 federal and state inspected plants. A total of 52,193 carcasses of beef weighing 31,474,477 pounds, 149 carcasses of veal weighing 26,437 pounds, and 248 carcasses of lamb weighing 12,375 pounds were graded during the biennium.



This section also graded and certified 7,577,007 pounds of meat and meat food products to state and federal institutions, using state specifications from the Meat and Poultry Specification Manual for North Carolina Institutions and using I.M.P.S. Specifications on all Federal Institutions. This acceptance work was performed in 26 state and federal plants for 20 state institutions, 8 city and county school systems and 10 federal institutions.

#### POULTRY AND EGGS (Market Development)

North Carolina ranks third in the nation in the production of turkeys, fourth in broilers, and fourth in eggs. Income from poultry decreased eight percent from 1969 to 1971, but production continued to increase in North Carolina's second largest agricultural industry. The combined income from poultry during 1971 was \$306,603,000, down from \$332,990,000 in 1969.

The 1971 production of eggs in North Carolina was 3,597,000,000, an increase of 5.6 percent over 1969. The income of \$117 million showed a decline of \$10 million, as compared to 1969. The average sale price per dozen in 1971 was 39.6 cents, as compared to 47.5 cents in 1967, thus, explaining the revenue loss of \$10 million to the state.

Turkey production in North Carolina during 1971 amounted to 10,469,000 from which a record income of \$41,771,000 was realized. Turkeys were the only segment of the poultry industry in which the income increased over the 1969 totals.

The production of broilers in 1971 increased 9 million head over 1969 while income decreased \$11 million to \$147,630,000. Broilers still rank second only to tobacco in agricultural income for North Carolina.

Increased production of broilers and eggs has had a disastrous effect on the individual producer and total poultry economy of this state. The inability of industry management to produce in line with demand for the product is a national as well as state problem. The industry has made concerted efforts to regulate production, but to no avail. Thus, a turn to more automation and labor reduction in efforts to reduce cost.

Our poultry and egg specialists have worked closely with industry during the biennium, as is indicated by the 859 assistance visits during the period. The problem in industry receiving the most attention was the PCB contamination of broilers and eggs. There are no figures available to estimate the dollar loss to

industry resulting from PCB contamination of fish meal used in poultry feed. Specialists from this section worked closely with USDA, FDA, and the State Chemist in an effort to locate, test, destroy, and/or clear all affected products.

In addition to PCB contamination, more sensitive test equipment and environmental concerns necessitated extremely close checks of feed ingredients for residues. Equipment was designed and installed in several poultry plants to clean feathers from coops to prevent littering along streets and highways.

Assistance was provided to the Central Distribution Food Center of N. C. Prison Department to develop new specifications for egg products and turkeys to more nearly meet the needs of using units.

All egg grading for the N. C. Random Sample Test was handled by the specialists in Poultry & Eggs. Assistance was also supplied to N. C. State University in the area of feed sample collections for residue testing.

Personnel set up and conducted food preparation (poultry & eggs) demonstrations at the N. C. State Fair. These demonstrations in the food kitchen were conducted in cooperation with the promotion section and the various trade associations.

A number of feasibility studies were conducted varying from changing from a one shift to a multiple shift plant, to a complete layout, equipping and staffing a proposed plant with revenue estimates for the first year of operation.

Classes were conducted on poultry and eggs for home economics students at both high school and college levels.

Personnel of this section served as instructors at the Southeastern Egg Quality Schools in Lexington, Kentucky and Athens, Georgia. There was continued cooperation with all related poultry associations and service organizations, both in North Carolina and throughout the Southeast.

#### POULTRY AND EGGS (Grading and Regulatory)

The Poultry and Egg Grading Section is operated under a cooperative agreement with the State and Federal Government and is responsible for the official grading of poultry, shell eggs and egg products in North Carolina. Primarily, the activities performed by this section are in the following areas: plants throughout the state having resident graders; fee grading, service rendered to firms or individuals desiring the service other than on a

resident basis; Veterans Administration; military installations; school lunch program; service to state institutions; supermarket quality checks; and Mandatory Egg Products Inspection Act.

Presently the grading service employs 13 licensed poultry graders, 12 shell egg licensed grades, and 4 egg product inspectors. Additionally, there are 3 relief graders licensed in each of the products. This personnel is stationed in 20 plants in the state that subscribe to the grading service. Each plant under contract operates under strict sanitation requirements, thus assuring the consumer of a better product; a product that is processed, graded, and packaged in accordance with all state and federal regulations. Marketing efficiency of the various products is increased by the proper certification of class, condition, and quality.

During the biennium, visits were made on a regular basis to give all possible assistance to each plant. Equipment and facilities were surveyed and technical assistance given when needed. Additionally, visits were made to plants considering the installation of the grading service and suggestions made for improvements which would enable them to conform with requirements as stated in the USDA regulations.

Following are figures showing the volume of products graded for this biennium in comparison with the previous biennium:

	<i>1968-70 Biennium</i>	<i>1970-72 Biennium</i>	<i>Percent Increase</i>
Shell Eggs (Dozens) . . . . .	90,027,650	95,488,830	6
Frozen Eggs (Pounds) . . . . .	12,270,569	15,479,389	26
Chickens (Pounds) . . . . .	579,869,418	589,607,200	2
Turkeys (Pounds) . . . . .	200,528,262	247,402,982	23

#### EGG LAW

Education was the key to success with the North Carolina Egg Law during the last biennium. Specialists, working with the law, worked closely with the egg industry to improve egg quality, educate the consumer, and enforce the law justly and fairly. Progress was made as can be seen from the decrease in violations. Fiscal year 1971 showed 17.6% violations while fiscal year 1972 showed 14.7%.

Work was begun in cooperation with the U. S. Department of Agriculture on the Egg Products Inspection Act. All egg products plants operating under the North Carolina Egg Law were visited and notified as to the requirements of the Act. Several follow-up





The N.C. Egg Law requires inspection of eggs offered for sale at the retail level.

visits were made to assure compliance. All egg products plants now produce pasteurized egg products under supervision of an inspector.

To coordinate a closer working relationship with producers and processors, visits were made to retail stores with producers and processors so they could observe and compare their egg quality at the production and processing level.

Our goal has been to improve and promote egg quality and markets in North Carolina. In order to do this we have worked closely with other departments of state government to acquaint them with the benefits of the law. Close contact was maintained with industry members by attending professional meetings of the industry.

Administration of the Egg Law involved visits to 18,740 retail facilities during the biennium. Personnel visited and worked with 1,166 producers and distributors in an effort to correct producer and distributor violations. Hearings were held with 15 violators in an effort to secure compliance without court action. The department brought one court case against a persistent violator during the biennium.

## WORK SUMMARY

	<i>Fiscal Year</i> 1968-69	<i>Fiscal Year</i> 1969-70	<i>Fiscal Year</i> 1970-71	<i>Fiscal Year</i> 1971-72
Retail stores visited .....	9,013	9,568	9,340	9,400
Retail stores in compliance ....	6,731	7,538	7,695	8,022
Retail stores in error .....	2,282	2,030	1,645	1,378
		25.3%	21.2%	14.7%
Distributors & producers visited	433	471		658
Inspections .....	17,835	20,180	22,142	21,818
Eggs graded .....	1,716,133	1,990,437	2,216,389	2,182,220
Cases of eggs removed from sale	4,388/13	2,931/2	3,342/20	3,283/2
Violation letters to retailers ...	2,282	2,030	1,645	1,378
Violation letters to distributors .	1,144	1,046	928	624
Meetings attended .....	97	44	42	29
Days in field .....	1,261	1,282	1,306	1,315
Visits per day .....	7.5	7.8	7.2	7.7

## FINANCIAL SUMMARY

Expenditures .....	\$59,077.45	\$74,479.51	\$78,899.43	\$84,276.24
Cost per visit .....	6.24	7.41	8.01	8.38



## TOBACCO

Functions of the Tobacco Section during the 1970-72 biennium were divided into two major categories: Statutory compliance related to tobacco marketing; and services to improve quality and marketing efficiency.

Under Chapter 106 of the General Statutes, the Commissioner of Agriculture is held responsible for certain functions related to the marketing of flue-cured and burley tobacco in North Carolina. These responsibilities were delegated to the Tobacco Section. As required by law, certified leaf sale reports were collected each month during the marketing season from each of the approximately 200 auction warehouses that operated in North Carolina during the biennium. This data was recorded in a permanent ledger as required, and from this record a summary sales report by markets was prepared and distributed to news media and a circularized mailing list each month during the marketing season. At the end of each marketing season of the 1970-1972 biennium, annual issues of the North Carolina Tobacco Report bulletins were prepared. This bulletin, which contains one of the largest accumulations of pertinent tobacco information, was distributed upon request to about 6,000 individuals, agencies and firms throughout the tobacco and other related industries.

As required by law, a summary report was also prepared each year for the N. C. Department of Revenue. This report shows volume of sales for each of the 200 warehouses in the state according to counties and markets. This data is used by the Revenue Department as a basis for establishing privilege license tax for each warehouse operator according to volume of sales. Spot checks were also made during the flue-cured and burley marketing seasons relative to warehouse charges, which are established by law, and other minor regulations pertaining to the marketing of tobacco.

Through the AMA service program, several areas of work were pursued during the biennium to improve marketable quality of tobacco and efficiency in marketing. Among these were:

1. Chemical Residues — The Tobacco Section, in conjunction with the pesticide section of the Chemistry Division, and in co-operation with N. C. State University and the Tobacco Grower Information Committee, helped to bring about noticeable progress during the 1970-72 biennium in reducing residue levels of DDT and TDE on leaf tobacco. The results of industry-wide sampling of the 1971 crop of flue-cured tobacco showed that these pesticide levels had been reduced from an average of 37 parts per million



in 1968 to an average of 3.8 parts per million in 1971 — a reduction of 90 percent. However, further efforts are essential in order to meet the standard of 0.1 parts per million established by our number one foreign customer, West Germany.

2. Foreign Matter and Uniformity of Grades — Efforts to improve uniformity of grades and market acceptability of flue-cured and burley tobacco was also given priority during the last biennium. Through the use of mass news media and through group meetings, most tobacco growers in North Carolina were reached in a continuing effort to assist them in doing a better job of preparing their tobacco for market. Through this broad contact, growers were urged to remove foreign matter from all tobacco and to make grade more uniform by culling out undesirable leaves so as to better meet market demands and at the same time increase returns to growers. Based on reliable reports, there was a decrease in the amount of foreign matter found in buying companies purchases during the 1971 season.

3. Current Market Situation Outlook — In cooperation with vo-ag teachers, Extension Service, farm organizations, and through mass news media, a continuing program to keep flue-cured and burley growers informed of the current tobacco situation and market outlook was carried out during the winter and spring months each year. This kept growers informed of the ever changing tobacco situation, and gave them an opportunity to adjust to meet the situation at hand.

4. Cooperation with ARS-USDA Research Program — A close working relationship was maintained with the USDA market mechanization research program and assistance was given warehousemen in applying approved practices to bring about a more orderly marketing situation. These practices, such as scheduling of farmer's tobacco to warehouse, and the use of mechanical means of moving tobacco on and off of sales floor, has resulted in more orderly marketing in firms where they are being used.

5. Packaging of Loose Leaf Flue-Cured Tobacco — Tobacco marketing specialists continued to cooperate with N. C. State University in long range industry programs to develop more efficient means of packaging loose leaf tobacco.

6. Assistance was given the Industry Flue-Cured Marketing Committee in working out market schedules and in dealing with problems that arose in North Carolina markets during the 1970-1972 seasons. Markets in various belts were assisted in making application of schedules adopted by the marketing committee.

7. Early in 1972, NCDA tobacco marketing specialists outlined an industry wide program to curb the spread of the tobacco

moth and cigarette beetle in cured tobacco leaving the farmer's packhouse and entering the market. One phase of this program will be implemented by the buying companies prior to the 1972 marketing season. Efforts will be continued in this project.

### COTTON

During this biennium the Cotton Section gave assistance to cotton ginner under the following categories: cotton gin work, cotton quality improvement, cotton ginner group activities, cotton ginner information programs, cotton gin and cotton mill environmental control programs, cotton marketing programs, occupational health and safety programs, and cotton storage programs.

Over the last two years the marketing of North Carolina cotton has shifted from a buyers market to a sellers market. This shift reflects the disappearance of large government stock of cotton due to a reduction of the cotton allotments for domestic consumption and poor growing seasons over parts of the cotton belt.

As a natural function of supply and demand, the price of cotton has risen dramatically. This price should remain high for the next few years due to the cotton acreage control program for domestic consumption which carries a price support payment. Acreage for export and acreage planted above allotment do not carry a price support payment. World stocks, while shrinking, have not disappeared to the point of driving world prices up to be attractive to North Carolina producers yet. Other domestic occurrences, if they continue as they are headed, could cause the availability of additional markets both domestic and foreign.

Poor weather conditions in North Carolina have caused a reduction in the potential harvest of cotton. The price level though has held enthusiasm high. The acreage shift from smaller producers to larger producers has continued and has caused a shifting of ginning services and a reallocation of the resources. This is due to the combination of smaller units forming high capacity facilities with other smaller units who are going out of business due to lack of potential.

Ecological concern has had its effect on the handling of gin trash and motes. To arrive at proper and adequate controls, it was necessary to educate the pure environmentalists concerning the methods and equipment used in ginning that could not be adopted to the spectrum of control equipment already available. The use of small diameter cyclones is proving successful and providing adequate control. Assistance has been given in registration in addition to engineering assistance in proper control equipment.



Training has been provided in OSHA (Occupational Health and Safety Act) requirements. This consisted of three schools for owners, managers and operating personnel. Specialist attended the instructors school in OSHA.

The weekly cotton report was published during the ginning season. During the last two seasons, the testing work was done at Clemson and published each Friday. Supervision and coordination was exercised as needed in this work.

Quality control under the Hi IQ program was continued and has contributed to the increased price received by North Carolina farmers.

#### FRUITS AND VEGETABLES (Market Development)

Interest in fruit and vegetable production continues to increase among North Carolina farmers. This is due in part to their attempts to find income sources to replace that lost from acreage reductions of their normal cash crops. It is due also to a continuing interest on the part of the buyers both within and outside the state to purchase more of their fruit and vegetable needs in North Carolina.

As a result of this trend, our marketing specialists in these commodities found it necessary to broaden their base of service assistance as more and more requests were made for their services. This was particularly true of the numerous firms who sought assistance in locating producers interested in producing one or more of these commodities on a contractual basis. Requests in this area of service reached an all-time high during the 1970-72 biennium.

The increase in production for fresh market also brought greater demands for marketing assistance. Much of this was channeled toward bringing buyer and seller together and in advising on the use of those marketing practices that would help the farmer realize maximum returns. A total of 140 different buyers and processing firms were contacted during the biennium by our specialists as they sought to help move the state's production through the best market outlets possible. In addition to contacting these buyers, our specialists assisted them with such things as setting up buying locations, transportation arrangements, official grading, setting up handling equipment and numerous other problems that arise in the marketing of fresh fruits and vegetables.

To aid individual producers as much as possible, personal on-farm visits were made to the extent that time and resources would permit. As a supplement to these visits, our specialists conducted



320 conferences and meetings with growers, grower groups, processors and buyers to discuss the marketing of these commodities. In addition, they appeared on 28 radio and television programs to pass on timely information about marketing specific crops.

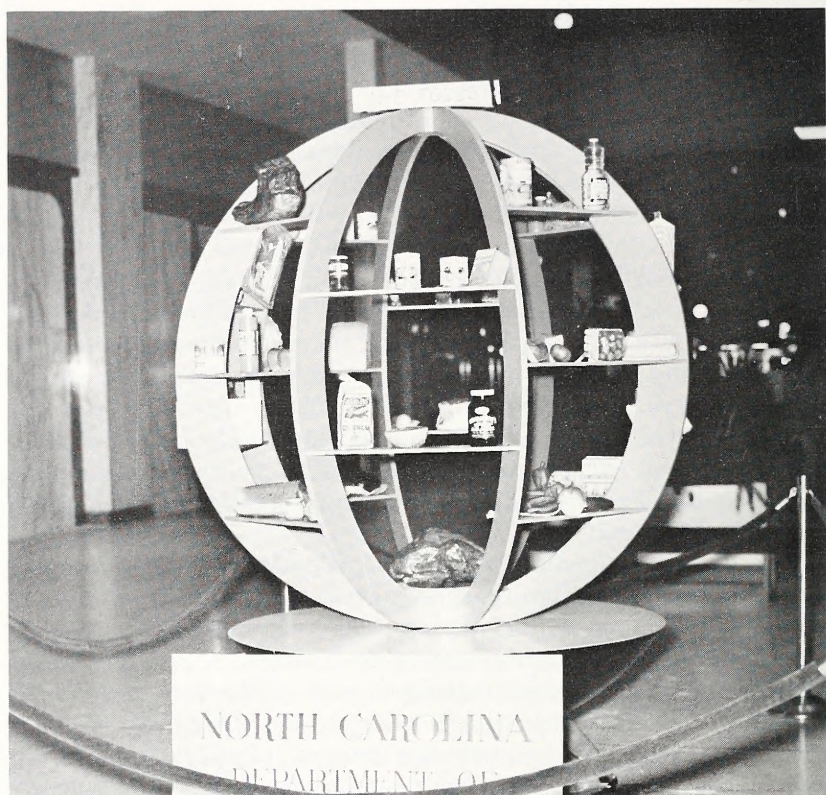
These specialists, working in cooperation with the division's promotion specialists and with individual commodity organizations sought additional outlets for North Carolina apples in Alabama; North Carolina blueberries in Louisiana and North Carolina sweet potatoes in Florida and Georgia. This involved personal visits to the major chain store buyers and independent buyers in these states, and providing them with specific information regarding purchase of these products. As a means of acquainting other buyers with the availability of fresh fruit and vegetable supplies in the state, our specialists prepared a bulletin giving information on each crop relative to quantity, dates of harvest, location, etc. These were distributed to approximately 1000 buyers throughout the nation.

Again, in cooperation with the Promotion Section and with Research and Extension personnel at N. C. State University, our specialists assisted in developing a new package for marketing North Carolina blueberries and also assisted in test marketing the berries in the new containers in each of the two years of the biennium. The new package was designed to reduce labor costs for the grower by providing a package that could be packed mechanically and one that would give the berries a longer shelf life in the store.

During the biennium there were approximately 51,000,000 packages of fresh fruits and vegetables sold commercially by North Carolina farmers for a cash value of approximately \$128,000,000.

The average acreage each year of these fresh market fruit and vegetable crops for which marketing assistance was available was as follows: sweet potatoes, 23,000; Irish potatoes, 14,700; peppers, 8,100; tomatoes, 2,800; strawberries, 1,900; blueberries, 5,000; snap beans, 9,100; cabbage, 6,500; sweet corn, 5,200; cucumbers, 6,200; watermelons, 8,200; cantaloupes, 2,100 and other vegetables, 4,200. In addition, services were available in marketing 4,000,000 bushels of apples and 640,000 bushels of peaches.

Another important source of income to North Carolina farmers was provided through contractual production of fruits and vegetables. This acreage amounted to approximately 53,000 each year of the biennium. The crops and acreages of each were: pickle cucumbers, 31,000; sweet potatoes, 5,000; Irish potatoes, 9,000; snap beans, 2,000; blueberries, 700; cabbage, 500; peppers, 3,500; pumpkins, 385; others, 700.



Exhibits such as this help keep the public aware of the variety and quality of North Carolina food products.

#### FRUITS AND VEGETABLES (Grading and Regulatory)

The work of this section, known throughout the fruit and vegetable trade as the Cooperative Inspection Service, involves determining and certifying the official grade of all fruits, vegetables and peanuts. It is carried on under a cooperative agreement with the U. S. Department of Agriculture and its services are available to producers, shippers, brokers, state institutions, military installations and receivers throughout the state. It is a self-supporting program financed through appropriate fees charged to the persons or firms who request the service. It is also one of the oldest services rendered by the division as North Carolina was one of the first states to provide this service.



The 1970-72 biennium was the most productive one the service has experienced with personnel requirements ranging from a small number during the winter months to 50 or more in the early summer and up to more than 300 during the late summer and early fall months.

The seasonal nature of the work necessitated conducting numerous training classes for new personnel and refresher courses for persons with previous inspection experience. These courses were necessary because accuracy is essential in determining the grade of a product and impartial application of the standards.

The standardization and inspection programs are the kind of services that improve the performance of the entire marketing system in ways that do not always meet the producer's or consumer's eye. They benefit both producer and consumer.

The producer and shipper want to know the grade of their product before it is shipped to a distant market. The consumer can buy with confidence when she selects her produce by a standard quality designation. The rapid increase in consumer size containers makes the use of official USDA grades and standards more important. Consistently uniform quality means repeat purchases by the consumer, which ultimately results in increased sales by the producer.

As previously mentioned, this service is provided to the receiving market trade in North Carolina as it is provided to producers and shippers of fresh fruits, vegetables and peanuts. We have permanent offices located in Asheville, Charlotte, Raleigh and Williamston which are staffed with some of our most experienced inspectors. Any interested party who so desires can contact any of these offices for an official USDA inspection.

The following statistical summary is given to show the scope, activity and volume of fruits, vegetables and peanuts graded and certified as to meeting official U. S. Grade Standards:

Pounds inspected at processing plants . . . . .	95,865,140
Pounds inspected at shipping point . . . . .	493,810,104
Pounds of farmer stock peanuts graded . . . . .	791,864,000
Packages graded at auction markets . . . . .	2,051,377
Carlots inspected for receivers . . . . .	1,575
Pounds inspected for state and federal agencies . . . . .	9,199,036
Number of training classes conducted . . . . .	45
Number of new inspectors trained . . . . .	222
Number of inspectors given refresher courses . . . . .	439



## CONTRACT, BRANDING AND SEED POTATO LAWS

The Handlers Act is a law designed to protect producers who enter into written contracts with persons or firms to produce fruits and vegetables at a stated price against unfair and illegal practices by the handlers. The buyer must have his contract approved, furnish a satisfactory bond as evidence of his ability to carry out his financial obligations to the producers, and obtain a written permit from the Commissioner of Agriculture before entering into such contracts.

During the past biennium there were 60 permits issued to handlers who contracted for approximately 53,000 acres of pickling cucumbers, 5,000 acres of green beans, 3,000 acres of peppers, plus several thousand acres of other vegetables such as squash, peas, sweet potatoes, cabbage, carrots, tomatoes and okra grown under contract in North Carolina. There were also in excess of 26,000 tons of fruit purchased on buying contracts. The buyers operated 325 receiving stations annually for the purpose of receiving and shipping produce under contract.

This service is of direct benefit to the producer and it insures the processor of an adequate supply of fruits and vegetables. In the long run, the consumer is benefited due to planned production based on supply and demand.

The Branding Law is designed to protect the consumers against deceptive packing and labeling of fruits and vegetables. North Carolina apple and peach growers and shippers recognized the value of accurate and true labeling and asked for and received a token appropriation for the enforcement of our branding and labeling law. This service began in 1967, working primarily with the growers and shippers. During the past biennium most of this work has been focused toward wholesale and retail outlets and has shown excellent results. Inspectors check to see that the containers are properly marked as to name and address, (including zip code), variety, size, volume or count, and grade. Grade markings apply to apples only. Effective July 1, 1972, all closed apple containers must bear the applicable U. S. Grade. State grades do not meet the marking requirements. They also check for deceptive packing, determining if the face, top layer, or exposed portion of the contents is representative of the remaining portion of the receptacle, and if they meet the grade as marked. This law applies to all apples and peaches packed for sale, offered for sale, or sold in this state, regardless of state or origin.

The Seed Potato Law is designed to protect North Carolina producers against inferior seed potatoes shipped into this state for propagation purposes. Eight to ten inspectors are assigned to this work during the period when seed stock is arriving in the potato areas. They check each lot to make sure they are certified and meet the grade standards set forth in the law. Attempts are made each year to bring seed potatoes into the state for propagation purposes which do not meet the requirements of our Seed Potato Law. Our services are most helpful to producers and dealers receiving seed which has been frozen en route. During the past biennium, our inspectors checked 36,819,100 pounds of seed of which 1,693,800 pounds were rejected for various reasons.

Other activities included attending producer, shipper, and dealer conferences to explain the requirements of the laws; working in cooperation with other agricultural commodity groups; preparing and presenting radio programs; and preparing newspaper articles for release.

#### GRAIN

##### (Market Development)

During the biennium the grain industry in North Carolina had two harrowing experiences. In 1970 Race "T" of the southern corn leaf blight struck. This blight, aided by drought, reduced yields to zero in some instances. Quality was also affected. Many producers harvested corn that was practically worthless. During the planting and growing season of 1971, everything seemed to be progressing nicely. Corn harvesting began and yields were good. Then on September 30, Hurricane Ginger swept into North Carolina. The accompanying wind and rain laid much of the unharvested corn and some soybeans on the ground covering some with water. It appeared that disaster had struck. In fact, 45 counties were declared a disaster area.

As bad as Race "T" and "Ginger" were, 1970 and 1971 were not, in general, bad crop years. A few individual cases, yes; but generally with good prices and better than expected quality and yields, most producers had better than average years.

There was considerable expansion and improvement of marketing and processing facilities in North Carolina during the biennium. An estimated 7 million bushels of grain storage, on farm and commercially, was added. Numerous facilities were made more efficient by improving and expanding handling capacities.



Several new buying facilities were set up primarily for soybeans. These added to the convenience of the producer and aided in better prices.

Considerable expansion and improvement was also evident in the seed industry. Several new facilities were constructed, many of which have the most modern seed processing equipment. Many others expanded and improved their facilities through additional storage and installation of better equipment.

The blight and Hurricane Ginger also caused much anxiety and concern in the seed industry. In 1970 the possible shortage on "N" Cytoplasm seed for planting the 1971 crop caused considerable concern. Low germination of seed soybeans in 1971, particularly as a result of Ginger's excess water, also caused much anxiety. In both instances ample seed, although many did not plant the variety they would like to have planted, was available.

Specialists of the Grain Service Section were active in most all areas of the grain and seed industries. Over 1,500 personal contacts were made, with assistance being rendered in practically all phases of the industries.

Fifty-one feasibility surveys were made for persons and firms in the grain and seed trade. About 25 percent of these surveys had to do with new facilities. The remainder was on facilities already in operation to determine needs for improvements and expansion. Assistance was provided in determining the sizes and types of equipment to be used, including cost estimates. Plans were provided through the assistance of the Engineering Section when requested.

Assistance was rendered to 191 firms with management problems. Inventory control, records, and hedging were the primary areas in which assistance was rendered. Information on quality control and assistance was provided for over 150 firms. Quality control was especially important during the biennium because of the damage to corn and soybeans from the blight and hurricane. Considerable grain went out of condition because of the unstable condition when harvested.

Grain schools and marketing clinics were held to stress the importance of sound harvesting, handling, and storage practices, as well as the importance of knowing the quality of what one has to sell or what he is buying. Over 200 grading demonstrations were given and over 100 demonstrations on proper use of equipment, insecticides and seed treating material were also given. Sanitation and good housekeeping were also emphasized.



Assistance was given in the area of expanding markets. More of our North Carolina corn is being used in state. The seed specialist has assisted seedsmen in locating out-of-state markets for more North Carolina seed. With the expansion of the soybean processing capacity, more of our soybeans are being processed in state.

During the biennium specialists assisted and/or cooperated with the Extension Service, N. C. State University, Carolinas-Virginia Grain & Feed Association, N. C. Soybean Producers Association, N. C. Corn Millers Association, N. C. Seedsmen's Association, and others in providing information and performing services of mutual interest.

### GRAIN (Grading and Regulatory)

The grain grading section experienced a noticeable increase in its volume of work during the 1970-72 biennium. The service was expanded to provide grading on a full-time basis at two soybean plants which have a processing capacity of more than 2000 tons of soybeans per day.

To render this service throughout the state, it was necessary to train and use 6 licensed inspectors, 35 samplers and 26 licensed technicians who, during the two-year period, sampled and graded the following lots of grain: car lots, 6,991; truck lots, 15,494; trailer lots, 15,903; and submitted samples, 1,635. This represents approximately 45 million bushels, most of which were soybeans and corn.

The establishment of another permanent grading station at Greenville late in the biennium indicates an even further increase in the grading service in the future.

### ENGINEERING

Today's agricultural economy is becoming more and more dependent upon automation, applied science and technology. The Engineering Section of the Markets Division is charged with the responsibility of assisting processors of agricultural products with the application of technology to their problems.

Engineering assistance to agricultural processors is rendered on a request basis. These requests generally come directly from processors or from other agricultural workers. Assistance provided the processor is normally in the form of a floor plan drawing and limited specifications of the processing facility showing the equipment layout and product flow. Frequently, however, assist-



Numerous marketing facilities throughout the state have been constructed or renovated according to detailed plans provided by the Division's engineering staff.

ance is provided by meeting with the processor and discussing his problem and making a recommendation at that time or obtaining necessary facts to study and made a recommendation later.

The purpose for providing engineering assistance to the agricultural processor is to enable him to produce a higher quality product more efficiently.

The following table shows the types of agricultural processors assisted, the number of each assisted, and the approximate construction cost of each during the period July 1, 1970 to June 30, 1972.

<i>Type of Agricultural Processors Assisted</i>	<i>No. of Processors</i>	<i>Estimated Construction Cost</i>
Meat Processing Facilities . . . . .	114	\$ 4,802,900
Grain & Seed Processing Facilities . . . . .	16	1,677,000
Poultry Processing Facilities . . . . .	9	584,000
Livestock Facilities . . . . .	8	784,600
Fruits & Vegetables Facilities . . . . .	7	60,000
Egg Grading & Handling Facilities . . . . .	6	292,000
Cotton Gins . . . . .	4	16,000
Rabbit Processing Facilities . . . . .	4	140,000
Feed Processing Facilities . . . . .	3	228,000
Bakery . . . . .	1	100,000
Seafood Processing Facility . . . . .	1	6,000
Total . . . . .	173	\$ 8,690,500

#### MARKET EXPANSION AND PROMOTION

The Market Expansion and Promotion Section worked in conjunction with the commodity associations in a number of promotional efforts involving North Carolina foods. Included in these were the Wonderful World of Soybean exhibit and poultry and egg cooking demonstrations at the State Fair, Pork Cook-off, yam promotion in the southeastern states, Restaurant Show and Food Dealers Convention, Watermelon Festival, Blueberry Festival Strawberry Festival, Dairy Promotion, and the N. C. Council on Food and Nutrition.

The first North Carolina Gift Package Show was held with firms within the state showing their products to associates who buy in large quantities. A brochure was printed listing all firms in the state that prepare gift packages. This information was also made available to the news media, motels, banks, and trade associations.

Public Service announcements were prepared promoting North Carolina food products and were made available to TV stations throughout the state. Food editor tours were arranged and followed through in order that the editors could be better acquainted with true commodity availability and market situations. These included apples, trellis tomatoes, poultry processing plants, potato chip plants, and fruit and vegetable auction markets.

Specialists assisted in the judging of 4-H Club food exhibits throughout the biennium. Our close working relationship with the Extension Service helped in emphasizing needs and values of a quality product. Coordinated work was rendered by the



section in planning for the Extension Consumerama held in Winston-Salem. Homemakers from all over the state were delightfully pleased with this project.

Section personnel coordinated a North Carolina Products Program at an annual Home Economics Teachers Conference. Pamphlets were also available on various commodities and recipes that would be helpful in their teaching programs. Commodity associations also had representatives to answer questions at this meeting.

In-store promotion continued to be a vital part of the total promotional work. Specialists assisted wholesale outlets and retail store managers through the supervision of the hiring and training of personnel to promote products over a given period of time. These promotions were usually on Thursdays, Fridays and Saturdays. Consumer interest and desires were well recognized, especially with a new product. A close working relationship prevailed with food buyers of the large and small chains, as well as with independent store owners within the state. Industry often times had new product merchandise come directly to the section due to the specialists know-how in the introduction of a new product.

Specialists were constantly called upon to promote distressed market products. Contacts were made with growers, wholesalers, retailers and news media, in addition to the in-store promotions. This was most effective with sweet potatoes, Irish potatoes, apples, peaches, blueberries, tomatoes and cabbage.

In addition to our own promotional programs, specialists assisted the commodity associations, both seasonal and non-seasonal, in their promotional efforts. Out-of-state trips were most helpful in the promotion of apples and sweet potatoes. A home economist appeared on TV in the states of Alabama, Florida and Pennsylvania. Those trips were coordinated with the Fruit and Vegetable Service Section who sent a specialist to call on the food buyers. The success of their efforts was such that the associations have agreed to help finance future out-of-state promotions.

The section worked with the blueberry industry, N. C. State University, Container Corporation of America, and leading chain store buyers in regards to designing a new type pint container for blueberries.

Our responsibility also involved coordinating a market test of the new container in the retail outlets. Specialists delivered the berries to the stores and assisted in setting up displays. Self-addressed post cards were placed on every fifth package so the purchaser could comment on it from a preference standpoint. This total promotional effort was an outstanding success and plans

were prepared to continue the test in the next biennium.

One home economist within the section prepared two to three news articles monthly (depending on harvest season) that were mailed to 260 newspapers, radio and TV stations and magazines. A total of 190 TV programs and 74 radio programs were prepared and given. In addition, several radio tapes were sent across the state emphasizing our promotional program.

We were able to expand our efforts toward developing foreign markets for North Carolina products and, in doing this, we worked closely with the U. S. Department of Agriculture and with the departments of agriculture in adjoining states.

In an attempt to get maximum utilization of our resources, we were instrumental in organizing a four-state association (North Carolina, South Carolina, Maryland and Virginia) called the Atlantic International Marketing Committee. One of the first joint efforts of this group was to prepare and print in three different languages an agricultural export directory for world wide distribution. Copies of this directory have been mailed to all agricultural and commercial posts overseas. A number of foreign companies with offices in the United States have received copies, and copies have been mailed to all companies whose names and products or services appear in the directory within the state. A more complete mailing is planned for interested parties within the state as well as to individual firms overseas with which we have made contact in the past. These directories will also be used at trade fairs and other overseas visits in the future to provide potential buyers with detailed export information regarding our state and area. Since the printing of this directory, the states of Georgia and Pennsylvania have joined the existing four states to make a total of six states now involved in this area of promotion activity.

Our foreign trade coordinator was appointed by the Secretary of Commerce effective July 1, 1971 to serve as a member of the Regional Export Expansion Council for a two-year term. The purpose of this council is to promote exports of all products, both agricultural and commercial. He also represents the Southern Association of State Departments of Agriculture on the International Trade Subcommittee of the National Association of State Departments of Agriculture Marketing Committee. The purpose of this committee is to work with the Foreign Agricultural Service of USDA in matters relating to states and groups of states involved in foreign trade.



In its efforts to promote new outlets for North Carolina products, as well as to help maintain present outlets, one or more representatives of the department attended trade shows in Cologne, Germany; New Castle, London; and Leicester, England; and shows in Jamaica, Curacao and Barbados in the Caribbean. In most of these shows actual products from North Carolina were on display and in addition to attending the shows the representatives visited with other prospects in England, Ireland, Jamaica, Barbados, and Port of Spain.

A representative visited the Middle East area to discuss possibilities of supplying feeder cattle, dairy cattle and a limited number of breeding swine. Proposals were submitted to interested parties in several areas of the Middle East for complete feedlot operations and these proposals are still under consideration. While there, the representative made a number of contacts with other individuals regarding additional commodities from North Carolina. It appears that the Caribbean and Middle East areas offer the most potential for increased exports at the present time and a concerted effort will be made in these two areas in the coming biennium.

The foreign trade coordinators efforts enabled a firm, new to the export market, to move 200,000 pounds of popcorn through an export agent to several buyers in Europe and the Middle East.

A successful kick-off campaign was launched late in the biennium in Bermuda to promote fresh poultry from North Carolina. This was a joint effort by the Department of Agriculture, a local exporter, a local poultry processor and an importer in Bermuda. For the first time the consumer in Bermuda is able to purchase fresh (unfrozen) poultry from North Carolina. This poultry is processed in North Carolina on Monday, flown to Bermuda, and is in the supermarkets there on Wednesday. Results of this venture to this point have been favorable and there are many other such projects which, with some imagination and lots of work, could be undertaken successfully. The basic requirements for such programs are joint cooperation and efforts between the Department of Agriculture and producers and processors in the state, with such efforts assuring us of maintaining our rank of fifth among all the states in the export of agricultural commodities.

#### MARKET NEWS

Changes in marketing practices and increased demands for additional information during the biennium necessitated a number



of changes in the daily farm market reports released by the division's market news service.

Among these was replacing the live quotation for commercial broilers with the FOB Dock Price quotation for ready-to-cook broilers. This is a more realistic report and more nearly reflects actual market conditions.

The state's commercial egg industry requested a revision in the daily market reports for eggs in an effort to have a weighted average price reported instead of a range in prices. The market news service responded to this request and in converting from the old method to the new was able to expand its coverage of the states egg markets and report a price more nearly reflective of actual trading.

Early in the biennium there appeared to be indications of a waning interest in the live turkey market report released through the market news service. A survey of the industry, however, revealed a strong interest in the report and coverage of the live market trading was expanded to more completely reflect actual market values.

Continuing emphasis was placed on our relationship with the U. S. Department of Agriculture and other state market news programs. One specialist attended and participated on the programs at both National Market News Association annual workshops during the biennium and at two of the National Market News Commodity Meetings. Numerous industry meetings within the state were attended to maintain a good working relationship with our sources of market news information.

This section continued to make use of all available methods of disseminating market reports. Information was released twice daily to the United and Associated Press wire services. Special typed reports were prepared daily for several newspapers including *The News & Observer*, *Wilmington Star-News*, *Fayetteville Observer*, and *Kinston Daily Free Press*. Daily radio programs were voiced live over WPTF in Raleigh and on tape to the Carolina Radio Network Stations.

Mailed reports continued to be an effective method of releasing market news. These included: semi-weekly Egg Report, semi-weekly Poultry Report, weekly Grain Report, semi-weekly Sweet Potato Report, weekly Livestock Report, and a daily Apple Report during the apple marketing season. A special Peanut Report was mailed each week to two newspapers and one farm publication.

In September 1971 the Markets Division began release of a weekly five-minute radio tape centered around better marketing.

A specialist from this section was selected to voice the program. Ninety-seven programs covering a wide range of topics were released during the biennium to approximately 50 radio stations throughout the state.

### COOPERATIVES AND TRANSPORTATION

Cooperatives are an integral part of the industry of agriculture in North Carolina with more than 90% of the farms using cooperatives in some way to enhance their farm business enterprise. There is an increase in the number of cooperatives in North Carolina ranging from very small (five to ten member groups) to very large organizations.

A great deal of emphasis is being placed on self-help programs that will add to the economical structure of local communities and low income people. Several cooperative ventures are proving very satisfactory in these areas. These cooperative organizations are organized under Chapter 54-V-129 of the General Statutes of North Carolina.

During the past biennium, direct assistance was given to the following new cooperatives in forming articles of incorporation and bylaws and in cooperative organization and management:

1. Martin County Cooperative Association, Inc., Williamston, N. C.
2. Sound & Sea Fisherman's Association, Inc., Washington, N. C.
3. Southwestern Farmers Cooperative, Inc., Murphy, N. C.
4. Farm Service Cooperative, Inc., Red Springs, N. C.
5. Cherokee Food Marketing Association, Inc., Cherokee, N. C.
6. Carolina Cu-Pep, Inc., Newton Grove, N. C.
7. Rodgers (Rodgerstown) Produce & Products Cooperative, Williamston, N. C.
8. Martin Industrial Development Association, Williamston, N. C.
9. Community Cannery of Clay & Cherokee Counties, Brass-town, N. C.
10. East Carolina Industries, Fairfield, N. C.
11. Macon County Trout Association, Franklin, N. C.
12. Pender-New Hanover Grain Association, Burgaw, N. C.
13. Weldon Producers and Consumers, Inc., Weldon, N. C.

Numerous other cooperatives were assisted in management matters, membership relations, record keeping, financing, and other areas necessary to keep a cooperative in sound condition.

Eighteen new non-profit agricultural, promotional organizations were given assistance in organization and in planning programs. These organizations are chartered under Chapter 55-A of the General Statutes.

In the area of transportation, numerous letters of protest were filed, as well as numerous ones in support of freight rate proposals affecting North Carolina agriculture.

Efforts were made through both the North Carolina Utilities Commission and the Interstate Commerce Commission on behalf of several shippers and receivers of agricultural products in North Carolina.

Considerable assistance was given to the agricultural industry in helping to get rail equipment for shipping products from originating points in North Carolina to market outlets throughout the United States.

Verified statements were prepared in opposition to several proposed rail abandonments. Should these rails be abandoned, it would seriously affect the ability of shippers to efficiently market our products.

A study was begun relating to the ability of United States shippers to deliver food to the various islands of the Caribbean. This study involves interviews with United States shippers to find the problem areas and opportunities in the Caribbean. Completion of this study will be in the fall of 1972.



## AGRICULTURAL FAIRS AND SPECIAL EVENTS

The Agricultural Fairs Section is responsible for inspecting and classifying agricultural fairs for compliance with North Carolina General Statutes regulating bonafide agricultural fairs. It is also responsible for assisting fair management in up-grading their fairs and for preparing a schedule of fairs each year listing place, date and management for distribution to those requesting this information.

During 1970, 59 fairs were inspected under the new point system, with 11 rating A; 18, B; 17, C; 7, D; and 6 failing to make the 600 points necessary to qualify as an agricultural fair.

During 1971, 58 fairs were inspected under the point system, with 6 rating A plus; 23, A; 21, B; 4, C; and 4 failing to make the 600 necessary points.



## MUSEUM OF NATURAL HISTORY

WILLIAM L. HAMNETT

*Director*

### INTRODUCTION

One needs to have only some awareness of the world around him to recognize that changes of many kinds are demanding attention. Directly and indirectly, the disciplines of natural history can, and must, contribute to the solution of these problems. The staff of the State Museum increasingly reflects a growing involvement with today's problems in today's world. Perhaps the single concern of greatest magnitude is our accelerating impact on our environment, in many cases the destruction of the environment.

The mandate given the museum in 1877 is as important today as it was then, and that was "to keep a collection to illustrate the agricultural and other resources and the natural history of the state, and to care for and make available to the people of the state the natural history collection which the state has entrusted to it."

The State Museum teaches about real things, which is one reason people enjoy coming here. At a time when many things are "instant", the museum reminds one that time is still an ingredient of existence. Time has given credence to evolution and to extinction as characteristics of species, just as much as birth and death are characteristics of individuals. But extinction has become so accelerated that there is a real fear that whole fauna and flora may disappear before their very existence is known to us.

#### GENERAL INTEREST

During the first four days of January 1971, the Apollo II space capsule was displayed just outside the entrance to the museum. This exhibit was provided by NASA for viewing by the people of North Carolina, who turned out in great numbers during inclement weather to see the capsule.

The museum entertained members of the North Carolina Museums Council, meeting in conjunction with Culture Week in Raleigh in December 1971.

A visiting committee of the American Association of Museums' accreditation program came in December 1971 to examine and to evaluate the State Museum.

The museum served as a meeting place and as a host for the North Carolina Shell Club and the Carolina Bird Club; and regularly provided a meeting room for the Raleigh Bird Club.

Our Governor had been accorded the privilege of receiving, upon their completion, the State bird plates, by Richard Sloan, of the 50 United States, prepared by the Griggsville Wild Bird Society for the people of North Carolina. The Governor assigned these to be displayed at the State Museum and to date 9 State birds of 26 states have been received.

The State Museum, as contained in G.S. 106.22 and the laws of this state, was transferred, by a Type I transfer, to the Department of Agriculture in accordance with an Act to Reorganize State Government, ratified July 14, 1971. In effect, the museum remained where it had always been.

The Museum Advisory Commission met four times during the biennium. The appointed members were: Mr. Micou F. Browne, Chairman, Raleigh; Mrs. Charles F. Gold, Rutherfordton, and Mr. Fred Fearing, Elizabeth City. The Commission received a progress report each month of the biennium.



## EDUCATION

A major activity of the museum was to provide educational opportunities and services to the people of the state. A natural history museum is one place where we should be able to recognize our role in the wise use of our natural resources. Seeing, touching and hearing about our state's resources are of immeasurable value to our visitors.

Few opportunities were missed to talk about the museum and its programs, as speakers were in demand for civic clubs, garden clubs, church groups, and teacher workshops.

As an aid toward making better use of the museum, the movie *Your State Museum* was sent on request to groups that indicated an interest in visiting the museum.

The educational staff attended 10 district NCAE meetings to acquaint teachers and other school personnel with the services which the museum can provide in their courses of instruction.

Lectures and guided tours were not only presented at the museum but were provided for school camp grounds (outdoor education) and rehabilitation groups at Board of Correction camps, and assistance was given in the development of school nature trails or conservation walks.

Considerable time was spent in taking color slides to be used as visuals in "canned" lectures on natural history subjects and topics requested by schools.

The educational unit was responsible for the distribution and receipt of its visual aid materials:

Travelling exhibits	5,893 sent out
Slides	20,447 sent out
Film Strips	965 sent out
Movie (10 mo.)	121 sent out

Instruction and demonstrations by the taxidermist on how to prepare bird and mammal study skins were of special interest to many scout groups and biology classes.

## ATTENDANCE

The attendance figure for the biennium was 424,368, which exceeded the previous total by several thousand. The graph shows that the second year of the biennium did not exceed any month of the first year. Aberrant January 1971 was due to NASA exhibit. In brief, an explanation of the decrease could be attributed to

busing, lack of convenient parking, and the level at which North Carolina history was being taught in the public schools. Our heaviest attendance months were again March, April, and May, when school groups came to Raleigh to visit the environs of the Capitol, and family groups constituted the majority on week-ends. The elementary, junior and senior high, and college groups provided 36% of our attendance, and the family week-end attendance another 30%.

A breakdown of group attendance for 1970-72 was as follows:

Colleges .....	65
Senior High School (10-12 grade) .....	230
Junior High School .....	1903
Elementary School .....	1891
Kindergarten and Headstart .....	241
Special Education .....	85
Scouts .....	125
Church Groups .....	101
Hospitals .....	60
Miscellaneous .....	208

Among the miscellaneous groups were such visitors as 4-H, FFA and FHA, YMCA and YWCA's, School for Blind and Deaf; Golden Age Clubs, and dignitaries from foreign countries visiting the Department and other State agencies.

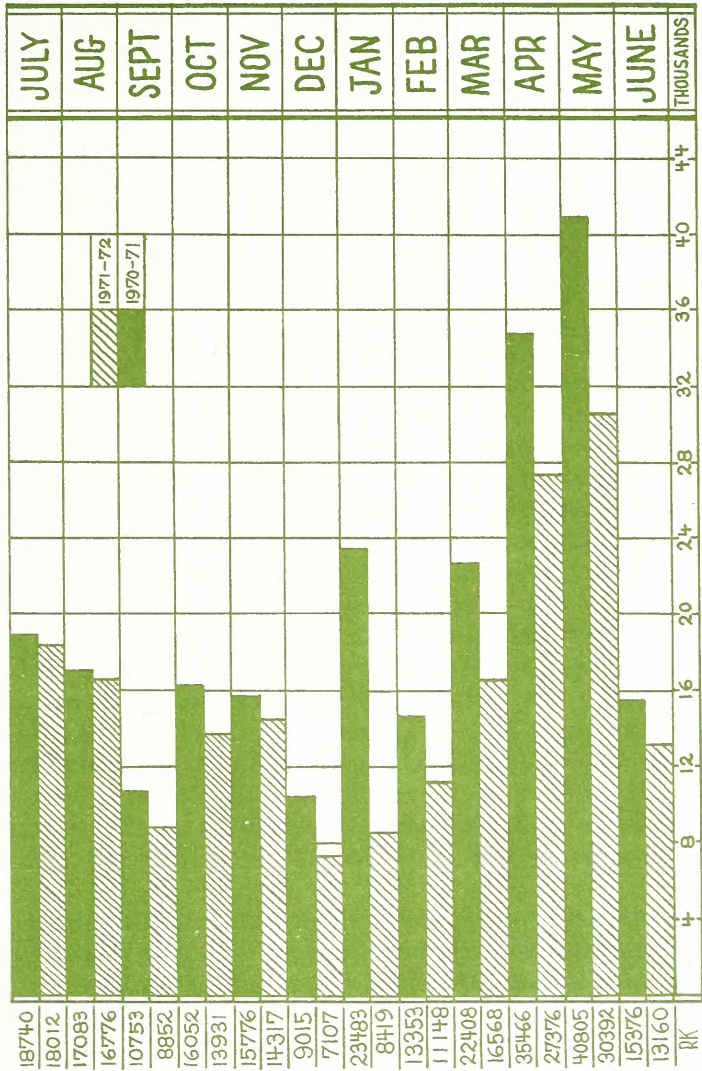
#### EXHIBITS

Five exhibits were placed on the floor to bring near completion the earth science displays. Those placed were: Silicates, Carbonates and Oxides, North Carolina Ores, Mineral Crystals, and Economic Uses of Minerals and Ores. Additional exhibits were prepared on different topics and placed on the floor in suitable locations — How Leaves Change Color in the Fall; Indestructibles — Ecology; Albinism; Migration of Birds; and Warblers of North Carolina.

Because of a growing interest in marine biology, three salt water aquaria were placed on display. In each aquarium were representatives of marine invertebrates.

The travelling exhibit program, so successfully used in the education work, expanded to a total of 145 exhibits now in circulation. In this program we had 24 species of birds and 12 species of mammals, and had at least four units for each species. To attest to their use during the biennium, 4,510 units were out for 52,365 days.

MUSEUM ATTENDANCE



Additional mammal species — black bear and otter — were added to the “blind” collection. This collection was presented 12 times to the classes of the visually handicapped who visited the museum.

Only normal maintenance and repairs to the museum exhibits this time were required, as there was no excessive damage, molestation, or vandalism.



In anticipation of the publication of *Reptiles and Amphibians of North Carolina* by the museum, 55 reptile illustrations were done and 18 amphibian drawings were completed. These are pen and ink biological illustrations rendered with lines, cross-hatching, and stipules. In addition to the museum duties, a considerable amount of art work was performed for other divisions of the department.

#### COLLECTIONS AND ACCESSIONS

Both the research and the study collections were augmented during the biennium. Considerably more time was spent in the field, and with a Curator of Invertebrates now on the staff, another discipline was added.

In the collection of materials for the herbarium, several state records were made of species not previously recorded. Several specie ranges were extended. The invertebrate collection included several new species not previously recorded.

During the biennium the following number of species were catalogued in their respective catalogues: 162 fishes; 2,276 amphibians and reptiles; 191 birds; and 10 mammals. The invertebrate catalogue, just started this biennium, now has 1090 entries.

The accessions were Botany 14; Ichthyology 1; Amphibian and Reptiles 52; Ornithology 14; Mammalogy 5; and Invertebrates 33.

Since a museum serves as a repository for many items not generally obtainable elsewhere, it is called upon at times to help in special assignments when the need arises. For research and other uses, loans were made as follows to:

Florida Technical University	6 Fishes
Illinois Natural History Survey	10 Fishes
Martin County Technical College	31 Birds
Massachusetts Audubon Society	13 Snakes
Michigan State University	1 Lizard
N. C. State University	20 Fishes
Tulane University	17 Fishes
University of N.C.-Charlotte	33 Fishes

The following gifts and transfers were made:

American Museum of Natural History	2 Snakes
Illinois Natural History Survey	12 Fishes
Louisiana State University	1 Lizard
Mississippi State University	15 Salamanders
National Zoological Park	30 Toads
North Carolina Wesleyan College	1 Lizard
Staten Island Zoo	13 Snakes, 1 Lizard
Mr. Leslie Hubricht	10 Slugs

#### PUBLICATIONS

Two publications, supported by the Museum Extension Fund — *Poisonous Snakes of the Eastern United States* and *Freshwater Fishes of North Carolina* proved to be quite popular and some copies are still available for sale.

The following materials, published by other State agencies, were sold (at cost) at the receptionist's desk for the convenience of visitors:

- Indians of North Carolina
- Forest Trees of North Carolina
- Geology of North Carolina
- Mineral Localities of North Carolina

In addition, a selection of inexpensive but popular natural history publications were also available. The museum sales for the biennium amounted to \$8596.36.

From the receptionist's desk, thousands of teacher packets and individual information sheets were handed to visitors upon request.

The Museum Extension Fund, a non-profit fund, was set up years ago by Mr. Harry T. Davis, now Director Emeritus, to provide money for the purchase and/or publication of materials to be sold by the museum. This Fund account now stands: In savings, \$24,507.58; in checking, \$2,898.16.

The following papers were published by members of the staff:

"Geographic Distribution of Pinewoods Snake, *Rhadinea flavilata*, in North Carolina", by William M. Palmer and David L. Stephan; *Herpetological Review* (in press)

"Geographic Distribution of the Chorus Frog *Pseudacris tri-seriata* in the Coastal Plain of North Carolina", by Duvall A. Jones and William M. Palmer; *Herpetological Review* (in press).

"Notes on the Natural History of the Scarlet Snake *Cemophora coccinea copei* Jan in North Carolina" by William M. Palmer and George Tregembo; *Herpetologica*

"Distribution and Variation of the Carolina Pigmy Rattlesnake, *Sistrurus miliarius milarius* Linnaeus, in North Carolina", by William M. Palmer; *Journal of Herpetology*

"Observations on the Natural History of the Carolina Pigmy Rattlesnake, *Sistrurus miliarius* Linnaeus", by William M. Palmer and Gary M. Williams; *The Journal of the Elisha Mitchell Scientific Society*.

"In Defense of Naiades", by Dr. Rowland M. Shelley; *Wildlife in North Carolina*.

"*Viola pubescens* in West Virginia", by Robert M. Downs; *Castanea* (in press).

"Additions to the Vascular Flora of the Carolina County Records", by Robert M. Downs; *The Journal of the Elisha Mitchell Society* (in press).

#### HAMPTON MUSEUM

For many years the Roy Hampton Marine Museum, formerly located in Morehead City, was open only six months of the year for the convenience of warm weather tourists. Now located in Beaufort, and open year round, it has proved to be a credit to the community in its service, not only to tourists but to the schools of the area. The museum is serving as a laboratory experience to most of the elementary schools.

The attendance figures reflect the popularity and the usefulness of the museum to this area of the state.

July 1, 1970 - June 30, 1971	19,865
July 1, 1971 - June 30, 1972	22,431

Not only was the museum used by local schools, but also by schools from nearby counties. Again many church camps, private camps, scout groups, ecology classes, and summer science workshops were listed as attending. The guest register had names listed from 27 states.

Because of the necessity to move from Morehead City to Beaufort, it was felt that a survey needed to be conducted to get local reaction to the change. From November 20 to December 18, 1970, a "man on the street survey" was conducted relative to the use and need of the museum. As by the date, one sees that by and large local residents were respondents. Of the 312 contacts, 189 had been to the museum, were impressed with what they saw, and



nearly all interviewed, whether they had been to the museum or not, felt as if it were an asset to the cultural life of Carteret County. All recognized it as a tourist attraction and an economic benefit to the community. An educational survey was also conducted. Fifty teachers were already using the museum as a teaching resource and considered it a worthwhile learning experience.



The traveling Apollo Exhibit drew large crowds at the Museum in early 1971.



## RESEARCH STATIONS DIVISION

PAT H. KELLEY

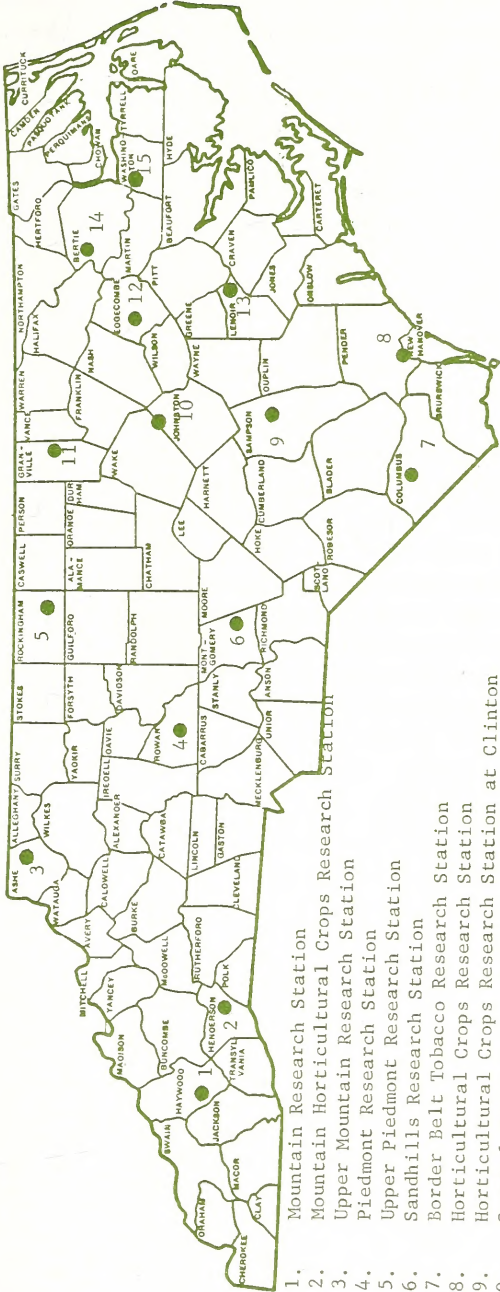
*Director*

### INTRODUCTION

In North Carolina, there are fifteen Research Stations. These stations are located in almost every area in the state so as to represent projects and development affecting all types of farm activity. Nine research units are budgeted by the North Carolina Department of Agriculture and six units are budgeted by the N. C. State University Agricultural Experiment Station.

This arrangement provides for a rather unique joint undertaking whereby the N. C. Agriculture Department furnishes management and N. C. State University Experiment Station furnishes the technical planning and supervision needed to carry out the research projects at all stations. The Division of Research Stations has the responsibility for managing the operation of the research farms, and its scope covers a wide range of matters including

LOCATION MAP  
RESEARCH STATIONS  
N. C. Agricultural Experiment Station  
N. C. Department of Agriculture



1. Mountain Research Station
2. Mountain Horticultural Crops Research Station
3. Upper Mountain Research Station
4. Piedmont Research Station
5. Upper Piedmont Research Station
6. Sandhills Research Station
7. Border Belt Tobacco Research Station
8. Horticultural Crops Research Station
9. Horticultural Crops Research Station at Clinton
10. Central Crops Research Station
11. Oxford Tobacco Research Station
12. Upper Coastal Plain Research Station
13. Lower Coastal Plain Tobacco Research Station
14. Peanut Belt Research Station
15. Tidewater Research Station



budget development and management, personnel, the planning and development of buildings and facilities, procurement of supplies and services, and in reality, all business aspects required of such operations.

Each station has a resident superintendent with a small corps of operating personnel. His responsibility is to manage the station and its effort in carrying out the research projects as outlined by the University research personnel. The work force is sometimes supplemented by temporary labor in accordance with the work load demands.

#### SIGNIFICANT DEVELOPMENTS AND RESEARCH PROGRAMS

There is no industry that requires more constant change and development than does farming. Because of this, programs of research need to be continually evaluated and frequently changed to keep abreast of the demands of our society.

Research on the wide variety of crops and animals conducted on the research stations requires a great deal of professional planning and supervision. In addition, much work and considerable equipment is necessary. All these things simply mean that research is expensive. Because this is true, special efforts have been made to improve irrigation systems on several farms with the hope that no project will be lost due to excessively dry weather.

Below is a brief review of some recent developments at the various research stations throughout the state; also an indication of the types of studies being conducted.

#### BORDER BELT TOBACCO RESEARCH STATION:

Tobacco breeding and variety testing and evaluation continues to be a major part of the research activity at this station. Our objective in this connection is, of course, to keep new and improved variety material for growers that will be acceptable to the tobacco trade. Progress is being made in reducing the number of passes through a field necessary to harvest a tobacco crop.

Entomology projects are taking a more important role at Border Belt, as efforts are being made to find more insect tolerant varieties. Studies are being conducted on the use of predators for control of insects, and surveys to reduce the number of applications of insecticides necessary for control are being conducted.

Promising research is being conducted on a new procedure for weed control in general crops.

Major Areas of Research: Tobacco (varieties, cultural practices, fertility studies, insect and disease control and plant bed studies) use of herbicide with general crops.

#### UPPER PIEDMONT RESEARCH STATION:

During the 1970-72 period, considerable land was cleared. This allowed for more uniformly shaped fields and increased pasture land.

Weaning tests for beef cattle have been conducted. These tests involved both grazing and feeding trials. The type of research in the beef cattle herd has been changed to mainly working with reproductive physiology problems.

A group of Holstein-Angus Heifers have been added to the program and a long term study is underway utilizing these cross-bred animals.

Tobacco research continues to be an important part of the program at this station but more emphasis has been placed on entomology.

Major Areas of Research: Tobacco (varieties, cultural practices, insect and disease control and plant bed studies), beef cattle (breeding and management studies).

#### PIEDMONT RESEARCH STATION:

At this Rowan County Station, significant changes have taken place in the past biennium.

The research on forage crops has been broadened and intensified. This increase in effort necessitated employing a research supervisor for this program.

The Holstein herd from the Mountain Research Station was transferred here making it possible to cull some undesirable cows and thereby substantially upgrading the herd.

The Random Sample Laying Test is continuing and renovation of two poultry houses was completed.

Interesting research has been conducted concerning feeds and feed formulas for both dairy and beef cattle.

Major Areas of Research: Small grain, corn breeding, soybeans, forage crops, orchard, dairy cattle, beef cattle and Poultry Random Sample Test.



**Results from Soil Warming Project — Cabbage — Central Crops Research Station, Johnston County, Clayton, North Carolina**

#### **CENTRAL CROPS RESEARCH STATION:**

An intensive program with horticultural crops continues at this station. One new program which may generate considerable interest in the future is the soil warming program being studied in connection with horticultural crops. This program deals with possible use of heated waste water. The Horticultural Science and Biological and Agricultural Engineering Departments at N. C. State University are involved with this project as well as the U. S. Department of Agriculture.

Gates have been installed in some areas of the farm to discourage trespassers who might interfere with fruits or vegetables thereby possibly disrupting research data.

An important function at this station is the swine evaluation program conducted for swine producers and the processing



industry. Interest in this program has made it necessary to expand facilities. A research study is being conducted now concerning disposal of animal waste.

Work continues to be done relating to development and practical use of mechanical harvesters for farm crops.

Major Areas of Research: Corn breeding, cotton, soybeans, tobacco, peanuts, small grains, vegetable crops, orchard (apples, peaches, and pears), brambles (raspberries, blackberries, dewberries), muscadine grapes, irrigation and special studies such as swine evaluation, effects of soil warming, and harvesting equipment.



**Winblo —Freestone Peaches — Sandhills Research Station, Montgomery County, Jackson Springs, North Carolina**

#### **SANDHILLS RESEARCH STATION:**

The Sandhills Research Station continues to work on peach breeding and improved variety development. Old trees on some

acreage have been replaced by young new varieties and it appears that production will be satisfactory. After sufficient research and study, superior varieties are released for commercial use. In January 1972, two such varieties were released, namely Winblo and Rubired.

Considerable fencing has been installed to reduce possible interference by trespassers.

Research studies are now being conducted at this station on vegetable crops. This program started in the spring of 1971.

Major Areas of Research: Peaches, apples, muscadine grapes (varieties, cultural practices, insect and disease control, soils, irrigation, storing, grading and packaging), and vegetable crops.

#### HORTICULTURAL CROPS RESEARCH STATION:

General vegetable crops research is conducted at this station, as in the past. Considerable work is done with ornamentals also. Some additional rented acreage has been made available making it possible to expand the blueberry research program. Other additions to the work at this station include work with grapes and peanuts.

Major Areas of Research: Vegetable crops (breeding, new introductions, cultural practices, disease and insect control), bulbs (breeding, cultural practices, and storage), blueberries, peanuts, and ornamentals.

#### OXFORD TOBACCO RESEARCH STATION:

A Tobacco Evaluation and Storage Facility was completed during 1971. This building is being used for storing the cured tobacco from experimental plots and for sorting, grading, and evaluating the small lots of tobacco from these plots. There is also a lighted area in this building which can be used for display purposes.

An experimental bulk curing facility was completed and this is being used in studies of curing, handling, and processing of tobacco.

Additional underground irrigation pipe (approximately 2130 feet) was installed.

Even though the field work is primarily with tobacco, the station is also used as one of the sites for testing the resistance of tomato plants to southern bacterial wilt. During this period, work





Gladioli — Horticultural Crops Research Station, New Hanover County, Castle Hayne, North Carolina



was completed on the first tomato varieties with resistance to this disease. These varieties, Venus and Saturn, will be available to the public in 1973.

Major Areas of Research: Tobacco (breeding, variety tests, cultural practices, plant bed management, disease and insect control, curing, handling, and processing studies), tomatoes (wilt studies), egg plants (wilt studies).

#### UPPER COASTAL PLAIN RESEARCH STATION:

A wide variety of general field crops are used in the research studies at this station. Most important recent developments have to do with the swine program. A new swine building has been practically completed and this facility will accommodate a 100 sow program. A new system of feed distribution is incorporated in the new structure.

Studies relating to chemical residue are being conducted. Also, much effort is being made in connection with animal waste studies.

Major Areas of Research: Corn hybrids, cotton, soybeans, tobacco, peanuts, small grain, grain sorghum, forage crops, hogs, beef cattle, and chemical residue.



Swine Facility — Upper Coastal Plain Research Station, Edgecombe County, Rocky Mount, North Carolina

## LOWER COASTAL PLAIN TOBACCO RESEARCH STATION:

Tobacco research continues to dominate the effort at this station. Changes in plot sizes and makeup seems to be proving helpful. Research studies with corn and small grain are also conducted.

Major Areas of Research: Tobacco (varieties, disease and insect control, cultural practices, plant bed studies), corn and small grain.

## PEANUT BELT RESEARCH STATION:

Major efforts have been put forth in important irrigation and water management studies. The system whereby almost all fields used for research studies can be irrigated is almost a reality. Research work with peanuts, corn and cotton continue to be dominate at this station; however, sweet potatoes and soybeans are taking a more important position.

Major Areas of Research: Peanuts (breeding, fertility studies, tillage studies, seed quality, variety verifications trials, insect controls, irrigation studies, weed control, pesticide residue studies, rotations, pesticide interactions, and disease control studies), corn (breeding, genetics, tillage studies, weed control and fertility studies), cotton (tillage, pesticide and residue studies, disease and weed control), sweet potatoes (breeding studies), soybeans (insect control, fertility and rotation work).

## TIDEWATER RESEARCH STATION:

Additional grain storage and drying equipment is being installed to accommodate grain products for the expanded swine program. Work is progressing on final plans for the new swine building.

Increase in the research effort relating to soybeans is noted. Most work on this crop has been concerned with breeding and entomology. A new irrigation well was completed in 1971 and is being used in a water control study.

Major Areas of Research: Forage crops, soybeans, corn hybrids, small grain, grapes, swine, and beef cattle.

## MOUNTAIN HORTICULTURAL CROPS RESEARCH STATION:

A wide range of horticultural crops are included in the research





**Trellised Tomatoes — Mountain Horticultural Crops Research Station, Henderson County, Fletcher, North Carolina**

work at this location. Sod planting of tomatoes for trellised vegetables is being studied, also a rotation system using tomatoes, cucumbers, and pole beans is being considered.

Redesign of plot layout is being studied to make possible greater use of mechanized equipment.

Advanced breeding studies are being made on grapes and consideration of production feasibility is being made. Continuing work is being done on apple breeding and variety studies.

**Major Areas of Research:** Vegetable crops (fertility varieties, cultural practices, disease and insect control, and processing qualities), orchard and vineyard (varieties, fertility, insect and disease control, dwarf root stock studies with apples), strawberries, blueberries, raspberries.



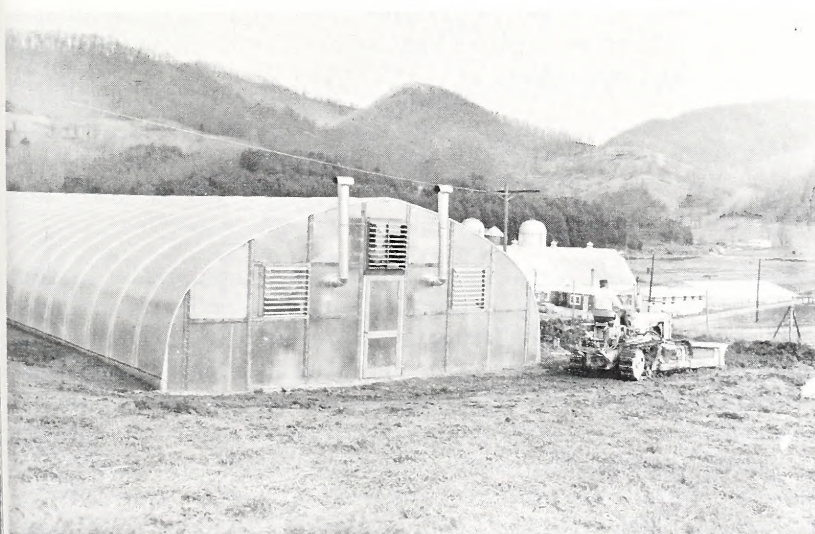
## UPPER MOUNTAIN RESEARCH STATION:

Important research work is being done at this station concerning beef cattle and sheep production. Forage and field crop studies are being made to develop needed information concerning the best grazing and feeding practices in areas such as this; where the climate limits the grazing period. Burley tobacco research continues with emphasis on disease resistance varieties and use of chemicals for weed and sucker control.

Major Areas of Research: Beef cattle, sheep, burley tobacco, pasture and forage crops.

## MOUNTAIN RESEARCH STATION:

In the summer of 1971 the animals and movable equipment used in connection with the dairy research program were moved to the Piedmont Station. This change has made possible more concentrated effort on horticultural crops. Since the economy of this area seems to depend increasingly on tomatoes, beans, and other food crops, it appears that increasing effort in this direction is proper. The latest addition to the research program at this station has to do with Christmas tree production. This new item shows considerable promise for this mountainous area.



Fiberglass Greenhouse — Mountain Research Station, Haywood County, Waynesville, North Carolina.

We have recently completed and put in use a 30' x 96' fiberglass greenhouse. We produced tomato plants for use here as well as the station in Henderson County.

Major Areas of Research: Vegetable crops, burley tobacco, corn breeding, pasture and forage crops, Christmas trees.

#### HORTICULTURAL CROPS RESEARCH STATION AT CLINTON:

This new station is getting a great deal of attention now and is rapidly developing into, what we believe, will be an outstanding and valuable research and development center. In 1971 considerable Capital Improvements were completed. An office building and three dwellings, as well as fertilizer and equipment storage buildings were put in use. Much has been done to make this land more useful for research. Land has been leveled, drainage has been improved, well and pumps installed, and extensive plans for irrigation have been partially completed. At the close of this biennium, work is under way on a new sweet potato and vegetable service building and an irrigation pond. It is anticipated that full utilization of this well planned research farm will be realized in the next biennium.

Major Areas of Research: Extensive research on many phases of horticultural crops, corn and soybeans, studies on sweet potato production and marketing.

#### RESOURCES

Agriculture, like other large commercial enterprises, in this nation of ours constantly demands improvement in its management, production and marketing technique. The Research Stations make a very real contribution to this overall effort. The various Department Heads and the University Research Staff have at their disposal many greenhouses and laboratories, but nothing will replace the need for actual field research and evaluation. The land we have available for this important work is our chief resource. The fifteen research stations located throughout our state provide the variety in soil type, elevation and other factors needed to develop valuable and practical information useful in farm operations of all types throughout this state.

In 1971, 1468 acres were used for field plot research. This effort reflects very intensive land use as well as a great amount of planning and work by the technical and supervisory staff. Also in many instances new and special equipment was used and tested. In addition to the special research plots, 1014 acres were planted in general field crops and 294 acres of pastures were used in pasture research. One hundred and four acres were rented in 1971 to provide the desired land for research. A total of 7198 acres is now owned by the Research Stations throughout the state.

In addition to the land, we have a substantial inventory of livestock, buildings and equipment. The total value as of December 31, 1971 was \$4,270,229. While this is an impressive figure, the land for inventory purposes is figured on an initial cost basis.

A resource of immeasurable value is the very fine and dedicated people who manage and work at our stations. Considerable credit is due them for their faithful as well as professional effort.

#### SERVICE FUNCTIONS

As pointed out previously, the 15 Research Stations in North Carolina serve primarily as field laboratories for experiment station scientists and this is an essential function, but these stations located in different areas of the state serve many other purposes. Each station provides a place where farmers and businessmen alike can go to see research in progress and view various tests and experiments being conducted, and from this gain a better knowledge of developments which will affect their own operations in the years ahead.



TABLE I. RESEARCH STATIONS STATISTICS

Station	County	Superintendent	Year Established	Acres of Land Operated	Elev. (Ft.)	Av. Annual Rainfall (Inches)
Border Belt	(NCDA)	Columbus	1949	102.0	95	51.20
Central Crops	(NCSU)	Johnston	1936	495.4 (1)	350	51.89
Hort. Crops at Clinton	(NCDA)	Sampson	1971	349.0	159	47.29
Horticultural Crops	(NCSU)	New Hanover	1947	73.0 (2)	10	56.62
Lower Coastal Plain	(NCSU)	Lenoir	1948	87.2 (3)	70	47.84
Mountain Hort. Crops	(NCSU)	Henderson	1949	220.5 (4)	2,147	50.25
Mountain	(NCDA)	Haywood	1908	388.5 (5)	2,800	45.92
Oxford	(NCDA)	Granville	1912	305.7	500	45.36
Peanut Belt	(NCDA)	Bertie	1952	366.0	50	48.92
Piedmont	(NCDA)	Rowan	1903	1,054.0	800	48.00
Sandhills	(NCSU)	Montgomery	1940	517.9	730	46.92
Tidewater	(NCDA)	Washington	1912	495.5 (6)	15	53.34
Upper Coastal Plain	(NCDA)	Edgecombe	1902	441.9	100	47.29
Upper Mountain	(NCDA)	Ashe	1944	420.5	3,300	53.39
Upper Piedmont	(NCSU)	Rockingham	1948	868.0	830	43.37

(1) Includes 10a. rented; (2) 13.5a. rented; (3) 4.0a. rented outlying plots; (4) 37.0a. used as if owned; (5) 34.2a. used as if owned; (6) 1064a. additional owned.

Field meetings are scheduled in many instances at which the public has an opportunity to hear an explanation of the different experiments by research scientists responsible for conducting such experiments. Through those field meetings, tobacco growers, for example, can learn how new varieties are developed with an explanation of the crosses which were made and the characteristics to expect in new lines.

In addition to these organized field meetings, there is an opportunity for small groups and individuals to visit the station at other times in order to make special studies of specific enterprises or practices. Many agricultural classes at N. C. State University engage in regular visitations as a part of their training program. Public schools quite frequently have classes visit stations as a part of their course work. Business and civic groups on many occasions tour stations near them and, of course, this practice is very worthwhile because of the importance of the research program to the general public and our desire for them to be fully aware of our activities.

The stations have many foreign visitors, particularly those who have study arrangements at N. C. State University. These people, necessarily, need to see as many different agricultural operations as time will permit. Visitors in all categories to all stations during the course of a year average about 15,000.

Other agricultural agencies also make use of research station resources for certain phases of their work. Among these, 4-H Clubs and Vocational Agricultural Classes visit the stations for a study of livestock enterprises and also crops which they may be studying at a particular time. In some instances, livestock on the stations is used by these young people and their teachers in developing judging teams.

The importance of livestock and poultry to the agricultural economy of North Carolina continues to grow, thus it is incumbent upon the research programs to aid in every way possible.

The Swine Evaluation Center at Central Crops is in reality a service function, in that it provides for performance testing of pigs from litters which indicates comparisons of certain strains of swine. The Random Sample Poultry Test at the Piedmont Station, although providing considerable research information is primarily a service function for evaluating different lines of poultry for the major poultry breeders in the state.

Scientific research is the major function of the research stations, but it is felt very strongly that service functions such as mentioned above is an extremely important part of our responsibility.





## SOIL TESTING DIVISION

DR. DONALD W. EADDY

*Director*

The Soil Testing Division has provided the citizens of North Carolina, both rural and urban, with rapid analytical and up-to-date informational services on their soils during the 1970-72 biennium. A breakdown of the soil samples analyzed during this biennium is as follows: Farmer and Homeowner routine samples — 171,037, Farmer and Homeowner problem samples — 5,160, Research samples — 8,462, for a total of 184,659. The 5,160 farmer and homeowner problem samples represent a 287 percent increase over the past biennium. This percent increase illustrates the extent of problems which exist and the confidence which the citizens of North Carolina have in the ability of their Soil Testing Division to deal with their plant nutritional problems.

In order to have a sound and progressive soil testing program with maximum benefit to all the people, it is necessary to constantly reevaluate the chemical procedures and informational material in light of the latest research. Much time and effort has



been expended during this biennium in updating our standard chemical procedures and computer program in addition to our informational material.

Demands have been placed on the Soil Testing Division to develop new chemical procedures to deal with new problems as well as more adequately deal with some old problems. Early in the 1970-72 biennium the Division hired a soil chemistry consultant, Dr. Adolf Mehlich, to initiate methodology research with the objective of developing new lime requirement, copper, zinc, and sulfate sulfur procedures. These procedures have been developed, tested and are in use. The new lime requirement procedure is being used routinely by the Division and enables us to more accurately evaluate the lime needs of the soil which is of prime importance in efficient crop production. Procedures for copper and zinc permit evaluation of levels of these two elements which have become extremely critical both from a deficiency as well as toxicity point of view. The problem of toxicity is becoming more serious each year with the advent of recycling animal, municipal and industrial waste products containing high levels of these elements as well as heavy metals. The sulfate sulfur procedure will enable us to evaluate possible sulfur deficiencies which are beginning to appear as a result of high analysis fertilizers which are low in sulfur. Greenhouse and field calibration of each of these new procedures will continue during the next biennium to give them the predictive power characteristic of good soil test procedures.

As a result of Legislative approval and funding during the 1971 Session of the North Carolina Legislature, the Soil Testing Division will be expanding its soil testing activities to include nematode assay and plant analysis. Upon completion of a new building to house the combined activities early in 1973, the Division will change its name to Agronomic Division. The addition of these two services will enable the Division to more adequately deal with the major problems facing the farmers and homeowners of North Carolina.

All states in the Southeast, and many other states and countries look to the Soil Testing Division for leadership in chemical procedure development and soil testing philosophy. As a result, members of the Division presented two scientific papers to the national meeting of the American Society of Agronomy and one to the American Peanut Research and Educational Association during the biennium. Also, members of the Division serve on study

committees of the S-52 Regional Soils Research Project which deal with regional soil problems as well as regional standardization of soil testing methods, reporting and recommendations.

Considerable time during this biennium has been spent conducting tours through the laboratory and presenting talks to farmer groups, workshops and various clubs. We feel that this educational and promotional effort is necessary to properly acquaint the citizens of North Carolina both rural and urban of the benefits of a soil testing program.

### FUTURE NEEDS

One of the prime responsibilities designated to the North Carolina Department of Agriculture is that of "service". In order to provide an increased level and quality of service the following will be recommended to the 1973 Session of the North Carolina Legislature by the Agronomic Division (Soil Testing):

1. Nematode Assay and Plant Analysis Program Improvement. Nematodes are known to exist in all soils in North Carolina and in many cases they severely limit yields, particularly in tobacco, corn, peanuts, soybeans and most of the horticultural crops. It has been estimated that these eel-shaped parasitic organisms do 30 to 40 million dollars worth of damage to Tar Heel crops each year. Methods are available to predict before a crop is planted whether nematodes will be destructive. This service will make it possible for the farmer or homeowner to determine the need for expensive chemical control measures before the crop is planted. However, present funding will make it virtually impossible for us to handle the 17,000 or so soil samples presently being analyzed by the University, much of which will be transferred to us upon initiation of the service. Also, this does not take into consideration increased demands from other farmers and homeowners.

Plant testing could and should be used to identify nutrient deficiencies and toxicities and therefore increase efficiency of production on the 120 or so crops grown in North Carolina. As a supplementary tool for soil testing and nematode assay this program will provide a service in which farmers can obtain a rapid diagnosis of problem areas and often make corrections in that year to prevent a complete crop loss. Many serious toxicity problems are developing as a result of re-cycling waste which contains high levels of heavy metals. Plant analysis is a

vital diagnostic tool in confirming these problems. However, present funding will not permit us to develop an adequate program to deal with these pressing problems.

In order to meet the above stated needs 7 new positions will be requested at an annual operating expense of \$39,708.

2. Cooperative Greenhouse Facility — Agronomic (Soil Testing), Seed Testing and Entomology Division

In order for the diagnostic services of the Agronomic Division (Soil Testing) to remain pertinent to the nutritional and environmental problems of the farmers and homeowner a greenhouse facility will be requested. N. C. State University has provided limited space in the past, but as their demands are growing it is anticipated that space will *not* be available in the future.

Further biological evaluation of new methodology and refinement of methodology now in use is necessary in order to be able to predict economic yields of plants to added nutrients and at the same time keep levels of nutrient additions low enough to preserve and enhance the quality of our environment. If these goals are to be met, stepped-up biological evaluation of our methods need to be started as soon as possible. North Carolina agriculture can remain viable *only* if these goals are met. Though it will be difficult to put a monetary value on these actions, the benefits should be self-evident.

To accomplish the above stated objective will require the construction of a greenhouse with an estimated annual operating expense of \$16,394.





## STATISTICS DIVISION

RUSSELL P. HANDY

*Director*

The Division of Statistics continued to keep tabs on the status of North Carolina agriculture. Cash receipts from farming reached the annual rate of 1.6 billion dollars for the first time during the biennium. Meanwhile, farm expenses continued to rise to the extent that the farmers' position was not improved very much. While crops have always been the major source of farm income in N. C., livestock and poultry are now gaining on crops as a source of revenue. Broilers, eggs and turkey production have made unusual advances in recent years. In fact we now rank 4th among the states in broiler production and 3rd in turkeys and eggs.

Cooperation with the U. S. Department of Agriculture continued during the biennium for the purpose of providing a comprehensive agricultural statistics service. Since the USDA is charged primarily with making state and national estimates and the

NCDA is further concerned with estimates for counties and local areas within the state, it is natural to work together to accomplish a common goal. The two agencies, working in concert, are known as the Federal-State Crop Reporting Service. There are several advantages to this arrangement as has been demonstrated throughout the years. Among these are: (1) eliminates duplication of effort (2) reduces the burden upon respondents, or sources of information (3) provides consistency in definitions and concepts (4) prevents conflicting statistics being published which may cause confusion and (5) by working together economizes on expenditures.

#### SOURCES OF INFORMATION

The backbone of the Crop Reporting Service is its corp of volunteer crop and livestock reporters. These loyal farmers, processors and agri-business dealers report regularly on acreages, crop conditions, quantities produced and sold, numbers of livestock on hand, prices received and paid by farmers and many other items of a current nature.

A major source of statistical data is the *Annual State Farm Census*. The Division of Statistics provides leadership to the counties in the collection of individual farm reports covering operations on each farm tract of 10 acres or more. The census is taken in compliance with the farm census law and is the responsibility of the Boards of County Commissioners. Results of the State Farm Census provide the basis for revision of state acreage and livestock estimates previously established by the use of sample data and is the principal basis for the useful and popular series of estimates by counties.

To supplement the usual sources of input material, probability area surveys were made to determine acreages of crops and livestock numbers as a part of a national sample. To obtain yield per acre forecast data, objective yield counts were made for several important crops. These are designed to improve the accuracy of the statistics published by the Division.

#### REPORTS ARE DISTRIBUTED

Crop and livestock reports are distributed free to all those requesting them. These include the semi-monthly *Farm Report*,

an 8 page publication. It brings together current data on nearly all agricultural subjects for which information is collected.

The mass media is a major user of crop reporting information, signifying the general interest in current agricultural information. Perhaps the publication in greatest demand is the annual compilation AGRICULTURAL STATISTICS which presents the most important series of data including the estimates for each of the state's 100 counties.

### SPECIAL SERVICES

During the biennium three special surveys were conducted and reports were published giving the results. During the fall of 1971 a survey to determine the number of horses and ponies in North Carolina was completed. It showed that there were 113,000 of these animals in the state of which 76,300 were horses and 36,700 were ponies. The publication included estimates by counties, numbers by breeds, number of operations by kinds and the purpose for which the animals were kept. These data were made available at the request of the Horse and Pony industry.

As a marketing service to the N. C. Association of Nurserymen, a directory of N. C. grown nursery stock was published. The objective was to inform the buying public the names of producers who had for sale specific varieties of nursery products. The Association reimbursed the Department for its out-of-pocket costs on this project.

A similar service was performed for the N. C. Christmas Tree Association with the same financial arrangement.

### PLANS FOR THE FUTURE

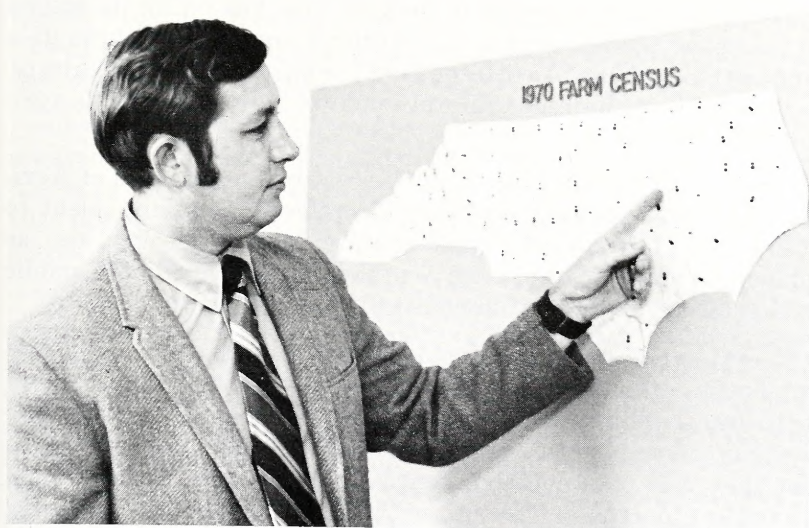
Due to the changing picture of agriculture, it is necessary that the Statistics Division frequently appraise and adjust its program to meet the needs of data users. Methodology must be altered and updated to maintain the proper accuracy of the estimates. A new program is being initiated designed to improve the reliability of the hog and pig estimates and to make reports available each quarter instead of semi-annually. This involves a new sampling procedure in which more of the large producers will be asked to report on each survey. Hogs have become an important part of the State's agriculture in recent years. We now rank among the top 10 states in annual production.



Fruits and vegetables are produced on fewer farms now but those remaining are larger. This means that more of these producers must be contacted individually to insure reliable statistics.

Progress has been made in updating our data handling system through automation but more needs to be done to improve timeliness of reports and to do more thorough analysis of survey indications.

Work is being done on estimating farm income for each of the counties — a statistic very much in demand. Hopefully we will have a publication showing this during the next biennium.



Wayne Leary directs the farm census each year.

## STATE WAREHOUSE FUND

WILLIAM G. PARHAM, JR.

*State Warehouse Superintendent*

There was a time when the farmer or commodity merchant with agricultural products to store had great difficulty in finding suitable storage facilities. He had no guarantee that the warehouseman would store his products safely or that the banks or trade would accept the warehouse receipts issued by the warehouseman.

The N. C. State Warehouse System, now beginning its second 50 years of service to the agricultural community through a cooperative agreement with the U. S. Department of Agriculture, has brought much needed improvement to North Carolina's agricultural marketing system.

The N. C. Warehouse Law authorizes the State Board of Agriculture acting through the State Warehouse Superintendent to license privately owned and/or operated warehouse facilities as component units of the State Warehouse System for the public storage of agricultural commodities.

A system of licensing, bonding and examination of public warehouses assures the farmers and others of a safe place to store agricultural commodities at reasonable rates and maintains the integrity of warehouse receipts issued for such commodities so that they will be acceptable generally as security for loans and for trading purposes. The system works to protect the integrity of receipts issued under the warehouse law to make them uniformly dependable and acceptable in banking and financial circles as reliable collateral for loans and to satisfy future contracts.

A system of licensing, bonding and inspection of warehouses assures the receipt holder of delivery of his products upon surrender of the receipts and payment of storage charges.

Each depositor's goods must be stored in such a way that he may recover the same product if the warehouse receipt calls for separate storage or the quantity of products of the same grade or better than called for if stored combined.

Periodic unannounced inspection of warehouses and their contents, personnel and policy insure that licensed warehousemen

meet the requirements of the warehouse law. Purely a voluntary program, inspection and licensing under the warehouse law is provided only to those who apply and qualify and can be adequately bonded.

The Warehouse Division operates under a cooperative agreement with the U. S. Department of Agriculture which has been in effect since the early 20's. Under this agreement, North Carolina state licensed warehouses for cotton, grain and peanuts are also licensed under the U. S. Warehouse Act. The state furnishes one examiner and office space for the federal supervisor. The examination program is supervised by federal personnel.

The law places the responsibility for adequate insurance against loss by fire and lightning on the State Warehouse Superintendent. The Superintendent is also responsible for collection of premiums and settlement of claims.

Adequate financial backing is essential to the development of a warehouse system. To establish this financial backing, a ginners tax of twenty-five cents a bale was placed on cotton for a three year period during the early 20's. The proceeds from this tax were placed in a guaranty fund.

The guaranty fund under the law can be used for securing first mortgages on warehouse construction. The purpose of this measure is to aid and encourage the establishment of warehouses operating under the system. The law requires that 10 per cent of the fund be used for warehouse construction. The law also specifies that such first mortgages shall be for not more than one-half of the actual value of the property covered by the mortgages and that they be amortized for not more than ten years. The State Warehouse System operates on the interest derived from loans and bonds while the principal fund acts as a guarantee back of the warehouse receipts issued by state licensed warehouses.

Storing farm commodities in licensed warehouses not only provides safe storage but also promotes more orderly marketing. Producers may therefore store their commodities and borrow money on them instead of having to sell them when the prices are depressed by harvest season gluts on the market.

Properly controlled, warehouse receipt financing is convenient to the borrower and safe to the lender. It enables financial institutions to make loans to individuals and relatively small businesses with a safety that can be obtained in no other practical way.

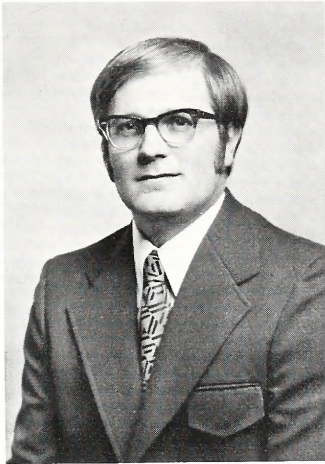


During the biennium, warehouse examiners uncovered a large shortage at the Farmers Grain Elevator, Warsaw, N. C. The warehouseman had delivered corn without cancelling warehouse receipts. The warehouseman also issued warehouse receipts for corn without knowing that the corn had been actually placed in the warehouse under his control.

The local manager was convicted in State Court of issuing false warehouse receipts and was given a sentence of three to five years.

# JUNE 30, 1970

	<i>First Mortgage Loans</i>	<i>Invested in Government Bonds &amp; Treasury Bills</i>
<i>Cash on hand</i>		
\$12,165.16	\$449,696.70	\$247,500.00
	JUNE 30, 1972	
\$27,068.36	\$321,106.70	\$351,500.00



WILLIAM A. WILDER, JR.  
assistant commissioner

*office of consumer services*

analytical

dairy

entomology

seed testing

structural pest control

veterinary

weights and measures

## PERSONNEL

### Office of Consumer Services

#### ANALYTICAL

WILLIAM Y. COBB	State Chemist
THERON ALEXANDER	Chemical Analyst II
ELIZABETH F. BARTHOLOMEW	Analytical Chemist I
JOSEPH L. BENNETT	Laboratory Helper
STANLEY E. BERKSHIRE	Food, Drug, & Cosmetic Inspector
AMORET D. BITTLE	Agricultural Microbiologist
ROSALEEN S. BRADY	Typist II
JOHN E. BROWN	Laboratory Helper
LINDA T. BROWN	Stenographer II
MILTON R. BROWN	Chemical Analyst I
THOMAS E. CARRIKER, JR.	Food, Drug, & Cosmetic Inspector
MARGARET B. CARTER	Analytical Chemist I
JAMES A. CHAPMAN	Laboratory Helper
HARVEY M. CLAYTON	Analytical Chemist I
RAGHUNATH S. DAHIYA	Chief Agricultural Microbiologist
DOROTHY M. DAVIS	Stenographer III
RALPH L. DENNING	Analytical Chemist I
J. THOMAS R. EDGERTON	Chemical Analyst I
EVELYN A. FREEMAN	Stenographer II
FRANKIE E. GERARD	Chemical Analyst I
WILLIAM T. GRANT	Food, Drug, & Cosmetic Inspector
ALEXANDER P. GRANTT	Chemical Analyst I
PEARL G. GRAY	Stenographer III
WILLIAM M. HARRIS	Analytical Chemist I
RICHARD B. HAYWOOD	Food, Drug, & Cosmetic Inspector
CHARLIE E. HINTON, JR.	Laboratory Helper
JESSE G. JERNIGAN	Analytical Chemist I
VERA C. JOHNSON	Chemical Analyst II
FRANKLIN D. LONG	Chemical Analyst I
DWIGHT M. LOWIE, JR.	Analytical Chemist I
THOMAS W. LUCAS	Laboratory Helper
W. P. MATTHEWS	Analytical Chemist I
KARIM S. MISHRIKY	Analytical Chemist I
VICKIE E. MOONEYHAM	Typist III
KENNETH B. NICHOLS	Food, Drug, & Cosmetic Inspector
FRED P. NOOE	Food, Drug, & Cosmetic Inspection Supervisor
NORMAN L. NORTON	Chemical Analyst I
MELVIN C. NUNN	Feed, Fertilizer & Pesticide Inspector
THOMAS M. PARKER	Food, Drug, & Cosmetic Inspector
RICHARD M. PEARCE	Chemical Analyst I
JOHNNY W. PEELE	Food, Drug, & Cosmetic Inspector
JAMES R. POLK	Chemical Analyst I
FLOYD E. QUICK	Chemical Analyst I
BETTIE L. SMITH	Typist III
JOHN L. SMITH, JR.	Analytical Chemist I
TERRY D. SMITH	Food, Drug, & Cosmetic Inspector
WILBUR G. SPRINKLE	Analytical Chemist I
WILLIAM SYLVER, JR.	Laboratory Helper
ROBERT T. TEAGUE, JR.	Analytical Chemist III



RONALD G. UNDERWOOD, JR.	<i>Food, Drug, &amp; Cosmetic Inspector</i>
JACK W. VAN STAVERN	<i>Analytical Chemist II</i>
WILLIAM T. VICK, SR.	<i>Analytical Chemist II</i>
WILLIAM S. WORSHAM	<i>Chemical Analyst I</i>

## PESTICIDE

WILLIAM B. BUFFALOE	Analytical Chemist II
JUDITH H. CARD	Stenographer II
JAMES L. CARROLL	Analytical Chemist Trainee
JAMES R. COLLINS	Pesticide Inspector
BETTY H. GRIFFIN	Stenographer II
LOUIE H. JOHNSON	Pesticide Enforcement Supervisor
MARY V. MERRITT	Stenographer II
GLENDA C. MILLS	Agricultural Microbiologist
MAURICE MULLEN	Pesticide Inspector
CLYDE C. REED	Pesticide Inspector
KENNETH E. WARREN	Pesticide Inspector
JAMES D. WATSON	Analytical Chemist I
ALLIE L. WILLIAMS	Analytical Chemist Trainee
EDWARD B. WILLIAMS, JR.	Analytical Chemist Trainee
GEORGE R. WINSTEAD, III	Analytical Chemist II
CHARLES H. WOMBLE	Pesticide Specialist

## INSPECTION

ARTHUR G. CAMPBELL, JR. ....	Feed, Fertilizer & Pesticide Inspector
COY F. HAYNIE .....	Feed, Fertilizer & Pesticide Inspector
LARRY M. JACKSON .....	Feed, Fertilizer & Pesticide Inspector
WILLIAM R. JERNIGAN .....	Feed, Fertilizer & Pesticide Inspector
JAMES R. STEVENS .....	Feed, Fertilizer & Pesticide Inspector
	Supervisor

## DAIRY

LEONARD F. BLANTON	Dairy Services Director
GARNIE E. ANDERSON	Dairy Specialist I
LAFAYETTE H. BOYKIN, JR.	Dairy Specialist I
PAULA C. BRIDGES	Stenographer II
CHARLES W. DUNN	Laboratory Technician
WILLIE D. GRAHAM	Laboratory Helper
PAUL R. JORDAN, JR.	Analytical Chemist II
JOHN R. MCGLAMERY	Dairy Specialist I
W. L. MCLEOD	Dairy Specialist II
PHILIP O. NICHOLS	Dairy Specialist I
ROBERT G. PARRISH, SR.	Dairy Specialist I
MARY R. SMITH	Chemical Analyst I
GRACE F. WATKINS	Laboratory Technician
GILES M. WILLIAMS	Dairy Specialist I

## ENTOMOLOGY

ALFRED S. ELDER	State Entomologist
KENNETH R. AHLSTROM	Plant Protection Technician
HUGH I. ALFORD, JR.	Entomologist II
ROBERT M. ANGELL	District Entomologist
EVE L. COMPERE	Stenographer I
KENNETH F. ELLIOTT	Plant Pest Inspector
JAMES F. GREENE	Entomologist II
STANLEY T. HOFFMAN	Entomologist I
REBECCA A. HOSLEY	Laboratory Technician

NEIL A. LAPP .....	<i>Plant Pathologist</i>
DEROLD G. LEDFORD .....	<i>Entomologist I</i>
GEORGE A. MCCLENNY .....	<i>District Entomologist</i>
JOHN M. MURRAY .....	<i>Plant Pest Inspector</i>
E. BLANEY PARKER, III .....	<i>Entomologist I</i>
MAXINE M. SATTERFIELD .....	<i>Stenographer II</i>
JOHN W. SCOTT .....	<i>Plant Pest Inspector</i>
JESSE F. SESSIONS .....	<i>Entomologist I</i>
KAREN R. SILVER .....	<i>Stenographer I</i>
HOWARD M. SINGLETARY, JR. ....	<i>Plant Ecologist</i>
CONRAD T. WEATHERMAN .....	<i>Entomologist I</i>

## SEED TESTING

GEORGE E. SPAIN .....	<i>Seed Testing Director</i>
WILLIAM W. ALLEN .....	<i>Seed Specialist</i>
JAMES M. S. BLOCKER .....	<i>Seed Specialist</i>
ROBERT C. BURRIS .....	<i>Seed Specialist</i>
HENRY M. CALLIS .....	<i>Seed Specialist</i>
REBECCA C. FRAZIER .....	<i>Clerk II</i>
VIRGINIA B. GRIFFIN .....	<i>Seed Analyst II</i>
SAMIRA B. GUIRGUIS .....	<i>Seed Analyst II</i>
THEODORE W. KING .....	<i>Seed Analyst II</i>
FRED L. MCHAN .....	<i>Seed Specialist</i>
MURPHY G. MCKENZIE, JR. ....	<i>Seed Specialist</i>
JANICE R. MORGAN .....	<i>Seed Analyst I</i>
ALBERTA C. SCOTT .....	<i>Seed Analyst I</i>
MIRIAM C. SMITH .....	<i>Stenographer II</i>
JEWELL G. STALLINGS .....	<i>Seed Analyst II</i>
CORNELIA S. STRICKLAND .....	<i>Seed Analyst II</i>
VIRGINIA L. B. TEAL .....	<i>Seed Analyst II</i>
MILDRED W. THOMAS .....	<i>Seed Laboratory Supervisor</i>

## STRUCTURAL PEST CONTROL

RUDOLPH E. HOWELL .....	<i>Pest Control Director</i>
TYRONE S. BULLARD .....	<i>Pest Control Inspector</i>
BENNY C. GRIFFIN .....	<i>Pest Control Inspector</i>
NORMAN R. HOWELL .....	<i>Pest Control Inspector Supervisor</i>
JOHNNY B. ISENHOUR .....	<i>Pest Control Inspector</i>
JAMES T. PERRY .....	<i>Pest Control Inspector</i>
JIMMY D. RAYNOR .....	<i>Pest Control Inspector</i>
ELSIE O. YOUNG .....	<i>Stenographer II</i>

## VETERINARY

THOMAS F. ZWEIGART, JR. ....	<i>State Veterinarian</i>
JOSEPHINE A. ALLEN .....	<i>Administrative Secretary</i>
GREY P. BAKER .....	<i>Medical Laboratory Technician II</i>
JOHN D. BAKER .....	<i>Veterinarian I</i>
JOHNNIE W. BARNES .....	<i>Laboratory Helper</i>
MARVIN A. BATCHELOR .....	<i>Livestock Inspector</i>
GARY C. BAUCOM .....	<i>Poultry Specialist I</i>
CHARLES R. BORDER .....	<i>Veterinarian I</i>
LOREN BUCHANAN, JR. ....	<i>Veterinarian I</i>
TRUDY S. BURNETTE .....	<i>Medical Laboratory Technician I</i>
ROBERT E. CARTEE .....	<i>Veterinarian I</i>
ALLIE W. CARTER .....	<i>Livestock Inspector</i>
JULIUS B. CASHION .....	<i>Poultry Specialist I</i>
EDWIN R. CHURCH .....	<i>Poultry Specialist I</i>
KENNETH G. CHURCH .....	<i>Poultry Specialist I</i>

JAMES H. CLEGG	Poultry Specialist I
WILLIAM W. CLEMENTS	Veterinarian I
OLA B. COLEMAN	Medical Laboratory Technician II
ALTON L. CORBETT	Livestock Inspector
EUGENE C. COUCH	Livestock Inspector
THOMAS E. CRUMPLER	Livestock Inspector
LILLY F. DAUGHTRY	Stenographer II
CLYDE J. DAVES	Livestock Inspector
STEPHEN E. DAVIS	Typist II
GUY E. DOWD	Poultry Specialist I
DEWEY M. EDWARDS	Livestock Inspector
L. J. FOURIE	Poultry Inspection Supervisor
JAMES A. FRAZIER	Poultry Specialist II
GEORGE D. FULLER	Livestock Inspector
JOHN M. GRIFFIN	Medical Laboratory Technician II
WILLIAM B. GRIFFIN	Veterinarian I
JULIAN E. GUYTON	Poultry Specialist I
JESSE R. HALL	Livestock Inspector
RALPH HAMILTON	Veterinarian I
GLENDA K. HELMS	Medical Laboratory Technician II
ELIZABETH B. HOUSE	Stenographer II
GEORGE L. HUNNICUTT	Veterinarian I
GENEVA C. HUNT	Stenographer III
ARTHUR E. JOHNSON	Livestock Inspector
EDWARD L. JOHNSON	Clerk I
HUBERT F. JORDAN	Laboratory Helper
JAMES L. KEARNEY	Laboratory Helper
JAMES D. KELLEY	Poultry Specialist I
KENNETH G. KEENUM	Veterinary Laboratory Assistant Director
IRENE K. KILPATRICK	Medical Laboratory Technician II
BETTY R. LILES	Medical Laboratory Technician II
OPAL M. LILES	Medical Laboratory Technician II
EUNICE G. LIPHAM	Medical Laboratory Technician II
THOMAS B. LOVE	Poultry Specialist I
ILEENE M. LOWDER	Stenographer II
WILLIAM P. MCCLEES, JR.	Veterinarian I
DOUGLAS H. MCFATTER	Poultry Specialist I
LAVINIA E. McLAUGHLIN	Typist II
PHILIP M. McROY	Livestock Inspector
GERI C. MANGUM	Medical Laboratory Technician II
PAUL C. MARLEY	Poultry Specialist I
OREN D. MASSEY, JR.	Poultry Specialist I
CONNIE L. MATTHEWS	Medical Laboratory Technician II
GARY M. MEDLIN	Poultry Specialist I
JAMES R. MILLER	Veterinarian II
OSCAR L. MOORING	Poultry Specialist I
DAVID A. MUNRO	Veterinarian I
CORRINE K. MURRAY	Medical Laboratory Technician I
THOMAS P. NEAL	Veterinarian I
NADINE R. NESBITT	Medical Laboratory Technician II
JAMES M. NEWMAN	Veterinarian I
DOROTHY C. PATE	Medical Laboratory Technician II
WALTER G. PEARSON	Veterinarian Specialist
PETER S. PENLAND	Poultry Specialist II
HERBERT P. PERRY	Poultry Specialist I
OLLIE C. PICKRAL	Livestock Inspection Supervisor
ROY M. PIERCE	Livestock Inspector
CLIFFORD W. PITTMAN	Veterinarian I
LARUE T. POLLARD	Medical Laboratory Technician III
HUGH M. POWELL	Veterinarian I
AL D. PRICE	Laboratory Helper



SARAH H. MARTIN	Typist II
VANCE E. PROCTOR	Livestock Inspector
LOLA S. REINCKENS	Stenographer II
MARTIN A. ROSS	Veterinary Pathologist
NED M. ROSS	Veterinarian I
MARY K. RUPE	Medical Laboratory Technician II
ROWLAND W. RUSHMORE	Veterinarian I
TERRELL B. RYAN	Veterinary Laboratory Director
PHIL R. SANDIDGE	Poultry Specialist I
JOSEPH A. SCHMITZ	Veterinarian I
GEORGE W. SIMPSON	Poultry Specialist II
CAROL V. SMITH	Medical Laboratory Technician III
ROBERT B. SMITH, JR.	Analytical Chemist I
DIXIE D. SOUTHARD	Poultry Specialist I
IDA C. STARLING	Medical Laboratory Technician II
JULIAN S. STARR, III	Veterinarian I
MARY G. VAN HORN	Medical Laboratory Technician II
MADGE H. WALKER	Medical Laboratory Technician II
KATHLEEN A. WHITFIELD	Medical Laboratory Technician I
NORMAN W. WHITLEY	Livestock Inspector
HARRY L. WILKERSON	Laboratory Helper
KENNETH C. WILKINS	Medical Laboratory Assistant
THERON S. WILLIAMS	Assistant State Veterinarian
WILLIAM R. WILSON, JR.	Veterinarian I

## MEAT AND POULTRY INSPECTION

JAMES A. BELL	Meat & Poultry Inspection Supervisor
EDWARD M. ATHAY	Meat & Poultry Inspector I
EDWARD D. BAILEY	Meat & Poultry Inspector I
STOKLEY E. BAILEY	Meat & Poultry Inspector I
NINA L. BARHAM	Clerk II
JOHN C. BAREFOOT	Meat & Poultry Inspector I
CLARENCE B. BARKER	Meat & Poultry Inspector I
CARLTON R. BARNES	Meat & Poultry Inspector I
PAUL R. BARNHARDT	Meat & Poultry Inspector I
JULIAN S. BARNHILL	Meat & Poultry Inspector I
JULIAN C. BEALE	Meat & Poultry Inspector II
WADE W. BEASLEY	Meat & Poultry Inspector I
ROBERT G. BECK	Meat & Poultry Inspector I
NEIL D. BECKENHAUER	Veterinarian I
DOYLE V. BENNETT	Meat & Poultry Inspector I
WALTER G. BENNETT	Meat & Poultry Inspector I
CLAUDE W. BENTLEY	Meat & Poultry Inspector I
JACK I. BERRY	Meat & Poultry Inspector I
PHILLIP R. BILLINGS	Meat & Poultry Inspector I
CLIFFORD BISHOP	Meat & Poultry Inspector I
TRAVIS B. BOWICK	Meat & Poultry Inspector I
VAN L. BOWMAN	Meat & Poultry Inspector I
ROBERT B. BOYD	Meat & Poultry Inspector I
RUTH R. BOYKIN	Meat & Poultry Inspector I
JASPER F. BRISSON, JR.	Meat & Poultry Inspector I
WILEY G. BROUGHTON	Meat & Poultry Inspector I
ALDEN E. BRYSON	Meat & Poultry Inspector I
ALVIN G. BUCHANAN	Meat & Poultry Inspector I
WILLIAM C. BUCHANAN	Meat & Poultry Inspector II
FREDA B. BUNCH	Meat & Poultry Inspector I
FLOYD F. BUNN	Meat & Poultry Inspector I
THERMAN C. BUTLER	Meat & Poultry Inspector I
WALLACE S. BYRUM	Meat & Poultry Inspector I
HUGH B. CAMPBELL	Veterinarian I

JACK B. CARTER	<i>Meat &amp; Poultry Inspector I</i>
SYLVESTER H. CLAYTON	<i>Meat &amp; Poultry Inspector I</i>
ALGIE D. COBB	<i>Meat &amp; Poultry Inspector I</i>
SHERMAN M. CRAWFORD, JR.	<i>Meat &amp; Poultry Inspector I</i>
CHARLES M. CREDLE	<i>Meat &amp; Poultry Inspector I</i>
JAMES E. CREEL	<i>Meat &amp; Poultry Inspector I</i>
LOLA I. CURTIS	<i>Meat &amp; Poultry Inspector I</i>
MEADY B. DANIELS	<i>Meat &amp; Poultry Inspector I</i>
FRANK J. DAVIES	<i>Veterinarian II</i>
JAMES B. DEAN	<i>Meat &amp; Poultry Inspector I</i>
LEWIS J. DEMARCUS	<i>Meat &amp; Poultry Inspector I</i>
CHARLES W. DUNN	<i>Meat &amp; Poultry Inspector I</i>
MERVIN M. EARLEY	<i>Meat &amp; Poultry Inspector I</i>
CECIL E. EDWARDS	<i>Meat &amp; Poultry Inspector I</i>
WAITUS H. EDWARDS	<i>Meat &amp; Poultry Inspector I</i>
TALMADGE R. ELMORE	<i>Meat &amp; Poultry Inspector I</i>
RANDALL L. ESSICK	<i>Meat &amp; Poultry Inspector I</i>
WILLIAM D. ESTEP	<i>Meat &amp; Poultry Inspector I</i>
RUIE A. EUBANKS, JR.	<i>Meat &amp; Poultry Inspector II</i>
JAMES L. EZZELL	<i>Meat &amp; Poultry Inspector I</i>
WILLIAM D. FAGGART	<i>Meat &amp; Poultry Inspector I</i>
LOUIS Z. FELTON	<i>Meat &amp; Poultry Inspector I</i>
AMBY C. FOOTE	<i>Meat &amp; Poultry Inspector I</i>
JOHN F. FORD	<i>Meat &amp; Poultry Inspector I</i>
ROBERT L. FOSTER	<i>Meat &amp; Poultry Inspector II</i>
WILLIAM K. FRY	<i>Meat &amp; Poultry Inspector I</i>
JARVIS W. GAY	<i>Meat &amp; Poultry Inspector I</i>
AVERY R. GHANT	<i>Meat &amp; Poultry Inspector I</i>
MAE T. GOWER	<i>Meat &amp; Poultry Inspector I</i>
WILLIAM M. GUNTER	<i>Meat &amp; Poultry Inspector I</i>
HEINZ GUTTENBERGER	<i>Meat &amp; Poultry Inspector I</i>
HENRY L. HALL	<i>Meat &amp; Poultry Inspector I</i>
FELIX HARDIN	<i>Meat &amp; Poultry Inspector II</i>
RUTH T. HARWARD	<i>Meat &amp; Poultry Inspector I</i>
CLAUDE D. HAYES	<i>Meat &amp; Poultry Inspector I</i>
CARL E. HEDRICK, JR.	<i>Meat &amp; Poultry Inspector I</i>
HUBERT L. HELMS	<i>Meat &amp; Poultry Inspector I</i>
HENRY H. HERMAN	<i>Meat &amp; Poultry Inspector I</i>
WILLIE J. HICKS	<i>Meat &amp; Poultry Inspector I</i>
LUKE H. HOBBS	<i>Meat &amp; Poultry Inspector I</i>
JAMES F. HOLCOMB	<i>Meat &amp; Poultry Inspector II</i>
HATTIE D. HOLLIFIELD	<i>Meat &amp; Poultry Inspector I</i>
CARL B. HOUGH, JR.	<i>Meat &amp; Poultry Inspector I</i>
JAMES B. HUGHES	<i>Meat &amp; Poultry Inspector I</i>
JOE C. HUNTER	<i>Meat &amp; Poultry Inspector I</i>
LARRY R. INGOL	<i>Meat &amp; Poultry Inspector I</i>
CONLEY G. ISENBERG	<i>Veterinarian I</i>
DALLIE B. JACKSON	<i>Meat &amp; Poultry Inspector I</i>
EUGENE R. JACKSON	<i>Meat &amp; Poultry Inspector I</i>
JAMES T. JACKSON	<i>Meat &amp; Poultry Inspector I</i>
JULIUS B. JOHNSON	<i>Meat &amp; Poultry Inspector I</i>
CHARLES E. JONES	<i>Meat &amp; Poultry Inspector I</i>
KYLE L. JONES	<i>Meat &amp; Poultry Inspector I</i>
CORNELIUS W. JONKHEER	<i>Meat &amp; Poultry Inspector I</i>
NICKY H. JORDAN	<i>Meat &amp; Poultry Inspector I</i>
NORA A. JORDAN	<i>Meat &amp; Poultry Inspector I</i>
ARTHUR B. KAUFMAN	<i>Meat &amp; Poultry Inspector I</i>
ROBERT M. KELLEY	<i>Meat &amp; Poultry Inspector I</i>
GEORGE M. KERR	<i>Veterinarian I</i>
JOHN R. KROHN	<i>Veterinarian I</i>
DELTON D. LAMM	<i>Meat &amp; Poultry Inspector I</i>

FLORENCE S. LAMPHIER	Accounting Clerk II
FELTON D. LANDING	Meat & Poultry Inspector I
WILLIAM P. LASSITER	Meat & Poultry Inspector I
THEODORE LAWSON	Meat & Poultry Inspector I
JAMES R. LEE	Meat & Poultry Inspector I
ALBERT D. LILES, SR.	Meat & Poultry Inspector I
ROBERT C. LINDLEY	Meat & Poultry Inspector I
RICHARD I. LOCKAMY	Meat & Poultry Inspector I
JAMES C. LONG, JR.	Meat & Poultry Inspector I
CHARLES V. LYDAY	Veterinarian I
THOMAS R. McDONALD	Meat & Poultry Inspector I
WOODROW E. MCGIMSEY	Meat & Poultry Inspector II
MARGARETE E. MCINTYRE	Meat & Poultry Inspector I
EDMOND G. MASSAD	Meat & Poultry Inspector I
WILLIAM C. MEDLIN	Meat & Poultry Inspector I
DANIEL W. MILES	Meat & Poultry Inspector I
CHARLES J. MILLER	Meat & Poultry Inspector I
MATT MOORE	Meat & Poultry Inspector I
JOHN H. MORRIS	Veterinarian I
MICHAEL G. MURRAY	Meat & Poultry Inspector I
CHARLES M. NICHOLS	Meat & Poultry Inspector I
CLARE W. NIELSEN	Meat & Poultry Inspector I
ELWOOD L. NIXON	Meat & Poultry Inspector I
JAMES P. OLLIS	Meat & Poultry Inspector I
CHARLES R. OXFORD	Meat & Poultry Inspector I
WILLIAM E. PALICH	Veterinarian I
JUNIOR E. PARKER	Meat & Poultry Inspector I
CHARLES M. PARRISH	Meat & Poultry Inspector I
FRED R. PARRISH	Meat & Poultry Inspector I
DALLAS I. PENNY	Meat & Poultry Inspector I
LAYTON W. PERRY	Meat & Poultry Inspector I
WADE H. PHELPS	Meat & Poultry Inspector I
OPHELIA PICKETT	Meat & Poultry Inspector I
OMAX PITTMAN	Meat & Poultry Inspector I
WILLIAM M. POYTHRESS	Meat & Poultry Inspector I
RAM D. PRASAD	Veterinarian I
ALBERT R. PRICE	Meat & Poultry Inspector I
MICHAEL L. PRUETT	Meat & Poultry Inspector I
JAMES R. RADFORD	Meat & Poultry Inspector II
ARCHIE B. RAINWATER	Meat & Poultry Inspector I
JOSEPH V. RANDOLPH	Meat & Poultry Inspector I
WILLARD M. RHOADES	Meat & Poultry Inspector I
SANDRA C. RICHARDSON	Stenographer II
HARVEY G. ROPER	Meat & Poultry Inspector I
CLARENCE E. ROSE	Meat & Poultry Inspector I
DIXIE B. RUSSELL	Meat & Poultry Inspector I
KERMIT E. SANDERFORD	Meat & Poultry Inspector I
WALTER N. SEAY	Meat & Poultry Inspector I
AARON L. SHAMBLEY	Meat & Poultry Inspector I
CARL E. SHEARIN	Meat & Poultry Inspector I
RAYMOND L. SHIELDS	Meat & Poultry Inspector I
ROXIE R. SILER	Meat & Poultry Inspector II
THOMAS L. SINK	Meat & Poultry Inspector I
HENRY M. SLOOP	Meat & Poultry Inspector I
ROBERT G. SMITHWICK	Meat & Poultry Inspector I
RICHARD W. SPIVEY, SR.	Meat & Poultry Inspector I
CHARLES L. STATON, JR.	Meat & Poultry Inspector I
GEORGE C. SULLIVAN	Meat & Poultry Inspector I
HOWARD L. TAYLOR	Meat & Poultry Inspector I
TOM THAXTON	Veterinarian I
JAMES M. THOMPSON	Meat & Poultry Inspector I
JAMES W. TILLMAN	Meat & Poultry Inspector I



HAL G. TRANSOU, JR.	<i>Meat &amp; Poultry Inspector I</i>
PEGGY R. UPCHURCH	<i>Stenographer III</i>
CLEVELAND O. WADE	<i>Meat &amp; Poultry Inspector I</i>
GILDA F. WADE	<i>Meat &amp; Poultry Inspector I</i>
DONNIE R. WALL	<i>Meat &amp; Poultry Inspector I</i>
HAROLD L. WARLICK	<i>Meat &amp; Poultry Inspector I</i>
HENRY B. WARREN	<i>Meat &amp; Poultry Inspector I</i>
AGNES M. WATSON	<i>Meat &amp; Poultry Inspector I</i>
ERNEST WATSON	<i>Meat &amp; Poultry Inspector I</i>
REDDIN WEBB	<i>Meat &amp; Poultry Inspector I</i>
GARLAND T. WELLS	<i>Meat &amp; Poultry Inspector I</i>
JAMES L. WEST	<i>Meat &amp; Poultry Inspector I</i>
JAMES C. WHEELER	<i>Meat &amp; Poultry Inspector I</i>
WILLIAM B. WHISNANT	<i>Meat &amp; Poultry Inspector I</i>
JAMES C. WHITE	<i>Meat &amp; Poultry Inspector I</i>
RODNEY WHITE	<i>Meat &amp; Poultry Inspector I</i>
WILLIAM H. WHITE	<i>Meat &amp; Poultry Inspector I</i>
LUTHER WILDER, JR.	<i>Meat &amp; Poultry Inspector I</i>
ROLAND WILLOUGHBY	<i>Meat &amp; Poultry Inspector I</i>
JAMES A. WOODS	<i>Meat &amp; Poultry Inspector I</i>
RICHARD C. YARBROUGH	<i>Meat &amp; Poultry Inspector II</i>
JACK M. YATES	<i>Meat &amp; Poultry Inspector I</i>
TERRY L. YOKELEY	<i>Meat &amp; Poultry Inspector I</i>

## WEIGHTS AND MEASURES

JOHN I. MOORE	<i>Director, Weights and Measures, Gasoline and Oil Inspection</i>
CECIL C. ABERNATHY	<i>Weights and Measures Inspector</i>
JAMES G. BARNES	<i>Trades Helper</i>
WALTER R. BURNETTE	<i>Weights and Measures Inspector</i>
THOMAS W. CLONINGER	<i>Weights and Measures Inspector</i>
JOY C. DAUGHTRY	<i>Stenographer II</i>
JAMES T. GURGANUS	<i>Trades Helper</i>
GRADY F. HALL	<i>Weights and Measures Inspector</i>
LESTER B. HARDIN	<i>Weights and Measures Inspector</i>
EVA S. HARRINGTON	<i>Stenographer II</i>
MARION L. KINLAW, JR.	<i>Supervisor, Weights and Measures, Gasoline and Oil Inspection</i>
ALAN R. MOORE	<i>Trades Helper</i>
RONALD D. MURDOCK	<i>Trades Helper</i>
DONALD L. NESBITT	<i>Weights and Measures Inspector</i>
RANDOLPH F. PEAKS	<i>Weights and Measures Inspector</i>
DONNIE G. PERRY	<i>Weights and Measures Inspector</i>
WILLIAM H. PERRY	<i>Liquid Fertilizer Specialist</i>
NED A. POWELL	<i>Weights and Measures Inspector</i>
CLYDE W. REEVES	<i>Weights and Measures Inspector</i>
THOMAS W. SCOTT	<i>Weights and Measures Inspector</i>
WILLIAM D. TAYLOR	<i>Weights and Measures Inspector</i>
JAMES P. WHITFIELD, SR.	<i>Weights and Measures Inspector</i>

## GASOLINE AND OIL INSPECTION

JOHN I. MOORE	<i>Director, Weights and Measures, Gasoline and Oil Inspection</i>
OLIVER J. AMICK	<i>Gasoline &amp; Oil Inspector</i>
CAREY M. ASHLEY	<i>Motor Fuels Analyst</i>
WILLIAM D. BARNES	<i>Gasoline &amp; Oil Inspector</i>
CAROLYN F. BUNN	<i>Stenographer II</i>
MARSHALL D. CARPENTER	<i>Gasoline &amp; Oil Inspector</i>

ROBERT F. COMER	Liquid Gas Inspector
JACK C. CONNOLLY, II	Motor Fuels Analyst
MILTON C. CONVERSE	Liquid Gas Engineer
MARSHALL D. COX	Motor Fuels Analyst
DALE H. DRIVER	Stenographer II
PAUL H. ETHERIDGE, JR.	Motor Fuels Analyst
ALICEGRAE F. FERRELL	Accounting Clerk III
JEAN S. GARY	Motor Fuels Analyst
ROY B. HALLMAN	Gasoline & Oil Inspector
ELLIOTT HARRISON	Laboratory Helper
HUGH F. HAYES	Octane Rating Analyst
THOMAS R. HAYES	Gasoline & Oil Inspector
HORACE E. HERMAN	Liquified Gas Inspector
CONNIE B. HINES, SR.	Weights & Measures Inspector
FRANK B. HINES, III	Motor Fuels Analyst
RACY C. HOLT	Gasoline & Oil Inspector
MARGARET R. HOOKS	Stenographer I
ARTHUR B. HUTCHINS	Gasoline & Oil Inspector
CHARLES A. HUTCHINS	Gasoline & Oil Inspector
HERMAN L. JONES	Gasoline & Oil Inspector
HAROLD U. KINDER	Gasoline & Oil Inspector
CURTIS R. LINDSAY	Gasoline & Oil Inspector
T. PAUL LOPP	Gasoline & Oil Inspector
ROBERT H. MCARVER	Gasoline & Oil Inspector
JOHN L. McLAUGHLIN	Motor Fuels Analyst
ROBERT E. MULLEN	Motor Fuels Analyst
THOMAS F. ODER	Gasoline & Oil Inspector
DEAN E. PADGETT	Weights & Measures Inspector
DOUGLAS M. PAIT	Gasoline & Oil Inspector
MARIE W. PERRY	Motor Fuels Analyst
TOMMY L. PHILLIPS	Weights & Measures Inspector
EDSEL H. PRIVETTE	Weights & Measures Inspector
PARLEY B. RASMUSSEN, JR.	Motor Fuels Analyst
JAMES R. RIVERS	Gasoline & Oil Inspector
JOSEPH C. ROEBUCK	Gasoline & Oil Inspector
FRANK L. ROUSE	Weights & Measures Inspector
DAVID W. SANDERS	Gasoline & Oil Inspector
ADAM D. SCOTT	Octane Rating Analyst
H. L. SHANKLE	Analytical Chemist II
HENRY B. SHEARIN, JR.	Gasoline & Oil Inspector
HARRY W. SHELTON	Motor Fuels Analyst
RAY D. SIGMON	Gasoline & Oil Inspector
CLARENCE D. SIMPSON	Gasoline & Oil Inspector
ROBERT M. SMITH	Gasoline & Oil Inspector
DAVID B. SPIVEY	Weights & Measures Inspector
ALTON P. STOCKS	Liquified Gas Inspector
EATON W. SUTTON	Motor Fuels Analyst
JOSEPH L. TAPP	Gasoline & Oil Inspector
RALPH G. THORNBURG	Motor Fuels Analyst
EARL E. VAUGHN	Gasoline & Oil Inspector
JAMES E. WALL	Motor Fuels Analyst
WORTH E. WILLIAMS	Gasoline & Oil Inspector
ANTHONY D. WINBORNE	Motor Fuels Analyst
GORDEN S. YOUNG	Weights & Measures Inspector
HAROLD T. ZIMMERMAN	Motor Fuels Analyst



## DIVISION OF CHEMISTRY

DR. W. Y. COBB

*State Chemist*

The Division of Analytical Chemistry administers thirteen regulatory laws specifically enacted for protection of consumers. These laws are the N. C. Food, Drug and Cosmetic Act (Article 12, Chapter 106), N. C. Bakery Inspection Law (Article 22, Chapter 106), N. C. Bottling Plant Law (Article 16, Chapter 106), N. C. Artificially Bleached Flour Law (Article 21, Chapter 106), N. C. Flour, Bread and Corn Meal Enrichment Act (Article 21A, Chapter 106), N. C. Oleomargarine Law (Article 23, Chapter 106), N. C. Pesticide Law of 1971 (Article 52, Chapter 143), N. C. Feed Law (Article 9, Chapter 106), N. C. Canned Dog Food Law (Article 13, Chapter 106), N. C. Fertilizer Laws (Article 2, Chapter 106 and Article 8, Chapter 81), N. C. Lime and Landplaster Law (Article 8, Chapter 106), N. C. Internal Combustion Engine Antifreeze Law (Article 51, Chapter 106), and the N. C. Linseed Oil Law (Article 32, Chapter 106).



The Department has been engaged in enforcement of various forms of the above-mentioned laws for as much as a hundred years. During the ensuing time industrial progress has engendered fantastic changes in market products. Such changes have necessitated that the regulatory agency be malleable with respect to providing fair and proper law enforcement.

These laws are designed to protect the health, welfare and economic interests of consumers, as well as to establish an ethically competitive business atmosphere, through use of the following tools of enforcement:

- (a) sanitary inspection of processing, storage, transportation, and display facilities to assure cleanliness of equipment, absence of contaminative or adulterative factors, proper handling of ingredients and finished products, and proper processing technique;
- (b) investigation of product labeling to assure adequate and descriptive information thereon (i.e. presence of artificial and natural sweeteners in so-called "dietary foods," proper directions for use in case of drugs, feeds and pesticides; adequate caution, warning, or contraindicative statements for prevention of human injury; preharvest crop limitations);
- (c) registration of products prior to sale in the State, as for instance pesticides, feeds, fertilizers, bleached flour, etc.
- (d) physical, chemical and/or microbiological analyses of products sold or exhibited for sale to insure proper composition and absence of adulteration or contamination;
- (e) issuance of permits for operation, such as soft drink bottling plants and bakeries;
- (f) licensing of individuals deemed qualified to handle hazardous substances, i.e. aerial and ground pesticide applicators;
- (g) restriction of time, place, quantity, and method of use of materials such as human and animal drugs and pesticides;
- (h) monitoring of use patterns (quantities and where used) of potential environmental contaminants such as pesticides;
- (i) embargo of suspect adulterated or misbranded goods to prevent their use or movement in channels of trade;
- (j) destruction of obviously unfit products by process of direct condemnation or court order;
- (k) hearings for violators to show cause why revocation of

license or product registration, or prosecution should not follow;

- (l) entering of civil or criminal proceedings against flagrant or persistent violators.

The following describes the specific duties and activities of each Branch of the Division during the 1971-73 biennial period.

### FOOD, DRUG AND COSMETIC (FDC) BRANCH

#### *Functions under the Law*

The Branch operates under the six laws dealing with foods, drugs, cosmetics, and medical device control. The FDC Act forms the basis for activity. It speaks broadly to protection of the health and economic welfare of consumers by providing safe, wholesome, unadulterated, and properly labeled products. The assurance of such is accomplished through establishment inspections, sample analyses, and labeling review.

Routine sanitary inspections of processing facilities are conducted at various intervals throughout the year. Sanitary discrepancies uncovered in such inspections are discussed with management, and a full written report is made by the inspector to the Raleigh office. Where justified, warning letters are sent from Raleigh to the firm's management as a stimulus toward immediate correction of such violations. If necessary, "show cause" hearings are held by the State Chemist.

Field inspectors also acquire "official" samples which are submitted to the Raleigh Laboratory for: (a) physical, chemical or microbiological assay to ascertain evidence of contamination or adulteration; or (b) review of the product labeling in regard to false, misleading, or incomplete information appearing on or accompanying the packaging. The food chemistry and microbiology laboratories are equipped to perform a wide range of analyses across the spectrum of regulatory services. A complete report is made on every sample to all the involved parties (manufacturer, distributor, complainant).

Recently, the Branch has created the position of food, drug and cosmetic compliance officer, whose responsibilities include the facilitation of more rapid field action where the facts of a case (laboratory analyses, inspection reports, etc.) indicate such, and the evaluation of product misbranding with subsequent followup to point of correction.

Specific cases are cited in the following paragraphs.

*Adulteration*

*Polychlorinated biphenyls.* The single case requiring greatest attention by the Branch during the biennium occurred in summer of 1971. At this time it was discovered that an industrial accident at a fish meal pasteurizing plant in Wilmington had resulted in sporadic adulteration of approximately 16,000 tons of processed meal over a period of three months with a chemical known as polychlorinated biphenyls (PCB). This adulteration occurred as a result of leaks developed in the hollow screw heat transfer processing equipment during processing.

The presence of PCB in the rations of young fowl at a level of 200 parts per million results in death in 15 days due to accumulation of fluids in the heart and abdominal areas. Presence at a level of 20 parts per million in the diet of hatchery hens reduces egg hatchability to zero within a short time. Furthermore, the chemical has toxic significance for humans; thus, the presence of PCB residues in any edible animal product is to be avoided.

Shipment and use in rations of approximately 14,000 tons of the contaminated meal resulted in catastrophic losses for the broiler and egg-producing community. One firm buried over 75,000 chickens at one time due to acute toxic symptoms. Several million shell eggs were destroyed due to excessive residues of the chemical. Coordinated efforts by this Department and the U. S. Food and Drug Administration resulted in recall and accumulation of slightly over 2,000 tons of the meal, which was later released for use in fertilizer.

The Branch field inspection and laboratory personnel performed tremendous service to the State through their tireless efforts during this time. For a number of weeks the laboratory operated a two shift, sixteen-hour day, six-day week.

A followup survey of 112 samples of eggs from all sections of the state taken during the first six months of 1972 indicated the problem to have been corrected. In the interim period, one poultry firm filed suit for recovery of \$68 million in damages from the several companies associated with ownership and processing of the fish meal.

*Potential Lead Poisoning from Domestic Food Pottery.* Early in 1970 the Food and Drug Administration uncovered numerous lots of imported pottery found to have improperly-fired lead-containing glazes. Such pottery, when contacting highly acidic foods such as coffee, fruit juices, tomato-based products and soft drinks, will release lead into the food and could lead ultimately



to symptoms of poisoning. As a followup to this situation, in late 1970 the Branch began a survey of potters in this State who were engaged in production of food utensils (cups, plates, mugs, etc.). Over 400 samples were taken for analysis in the survey. As a result, it was found that a small group of domestic hand potters in the Seagrove-Sanford area were in certain instances producing utensils offering significant hazard to the public. Utensils from one pottery were found to release lead at over 2100 parts per million (300 times the maximum allowable limit).

In June of 1971 a public warning pertaining to particular items from seven potteries was made by the Department. Simultaneously, corrective procedures were introduced into the potteries in question through the aid of ceramic engineers at N. C. State University. Cooperation between the potters, the University and the Department rapidly solved the problem, as has been indicated by two comprehensive field surveys in late 1971 and early 1972. The potters are again enjoying sale of the fruits of their labors without worry about the safety of these products.

*Comingling of Pesticide Treated Seed with Grain for Human Consumption.* A serious and continuing problem for the Branch has been the comingling of pesticide-treated seed soybeans and cereal grains intended for human consumption. Various seeds are routinely treated with pesticides to prevent damage by fungi and insects, thus protecting viability. The resulting levels of pesticide are much higher than have been cleared for tolerance on soybeans and grain by the Food and Drug Administration. As with the case of mercurial pesticides, seed treatment levels may offer toxic implications for humans. The most striking and horrible example of this occurred in New Mexico in 1970 when mercury treated seed were fed to swine which were subsequently slaughtered and consumed by a family of nine. As a result of this consumption three children suffered irreversible brain damage and no longer have the physical or mental capability of caring for themselves. Shortly following this incident, on March 9, 1970, mercurials were banned for seed treatment. Various small quantities of mercurial-treated seed are still to be found, however, and are of concern to Federal and State food regulatory officials.

Nineteen embargoes were placed during the biennium for presence of treated seed comingled with soybeans or grain. In certain instances the comingled seed were a different type from the adulterated food, as with the case of treated wheat in the presence of food soybeans. In such cases, the smaller grain was

easily removed by passing the product over a series of screens. When treated seed of the same type as the food appear comingled, as with treated soybeans among food soybeans, handpicking, where deemed advisable, has been found as the only method of rendering the food safe for human consumption.

### *Misbranding*

Misbranding, that is, the use of false or misleading labeling statements, the failure to place required information on packaging, or use of misleading form or fill of containers is a problem of considerable magnitude. Considerable time and efforts are spent by industry advertising personnel to design appealing labels which draw the customer to the product; unfortunately, the regulatory official finds that in many cases the company is so taken with the idea of the label impact that they neglect to otherwise properly handle required label information, or make unsound claims for the product.

*Cure-for-baldness.* In the summer of 1971 an inquiry by a Raleigh newspaper stimulated seizure in Raleigh and Wilmington of a drug product being advertised and marketed as a cure for falling hair, bald spots, dandruff, and "thinning around the edges." While a product of this sort would be a welcome addition to the topical drug market, it yet seemed from a perusal of the rather common ingredients of this product that it was more of a "scalp treatment" than a baldness cure. Since the product was of interstate nature, an agreement was reached with the Alabama manufacturer, the Food and Drug Administration, and the State Chemist for complete and factual relabeling of the product, whereupon it was released.

### *Disaster Investigations (Fires, Floods, Hurricanes, Wrecks), Embargoes and Destructions*

Natural and man-induced disasters are of random, recurring nature. Numerous fires, wrecks, and a major hurricane of concern to North Carolina can reasonably be expected during each year. Exposure of foods, drugs and cosmetics to such catastrophic conditions most frequently results in their being rendered unwholesome or unsafe for human use. As a matter of policy, no prescription or over-the-counter drug to be taken internally is ever allowed to be used following such exposure. Topical drug preparations, foods and cosmetics are cleared strictly on the basis of the

absence of physical or chemical changes resulting from such exposure. Destructions of disaster damaged goods is witnessed by departmental inspectors. Salvable goods are released for reconditioning as indicated by circumstances. During 1970-72, the Branch investigated 30 fires involving \$1.3 million in products, four wrecks involving \$44,000 worth of merchandise, one mill explosion involving \$27,000 in damaged grain, and one hurricane wherein damages to foods, drugs and cosmetics in coastal counties was minimal.

The FDC Act provides that whenever an inspector has cause to believe any food, drug, cosmetic or device is adulterated or misbranded, such articles may be embargoed until such time as their fate can be adequately determined. Where food is obviously decomposed or otherwise unfit for human consumption, inspectors are vested with the authority to condemn and destroy such merchandise forthwith or to render it unsalable as human food. During the period 1970-72, FDC inspectors placed 377 embargoes. These inspectors witnessed 197 destructions of damaged goods valued at \$1,355,733. Eighteen lots of goods valued at \$109,085 were either reconditioned in the presence of an inspector or released to salvage companies. Twenty-two lots of damaged goods valued at \$13,564 were authorized for use in animal feed.

### *Changes in Law and Regulations*

The 1971 Legislature enacted two changes in the Bakery Inspection Law, as follows:

- (a) The prohibition of any natural or synthetic coloring agent in any white bread product (bread, rolls, buns, biscuits) to prevent misleading of the consumer;
- (b) Clarification of the authority of the Commissioner to order closure of bakeries which are found to be in significant violation of the law.

The Board of Agriculture took the actions of:

- (a) adopting under the regulations of the FDC Act those definitions and standards of identity for meat and meat products used by Federal and State Meat Inspection Services;
- (b) deleting requirements for health cards for employees of bakeries and bottling plants;
- (c) abolishing the requirement that soft drinks containing sodium benzoate indicate the quantity of the preservative on the label.



*Court Cases*

Legal steps are taken by the Branch only upon failure of management to give significant indication of desire to conform to the law. Action was pursued against three firms during the biennium, two criminal cases regarding addition of the illegal preservative sodium sulfite to hamburger to preserve its red appearance, and one civil case against a bakery found to be in continued violation of sanitary requirements. The criminal actions resulted in fines and suspended sentences against the management of both markets. The civil action resulted in the court rendering a permanent injunction against the bakery in question, forbidding the company from such continued negligence in the future.

<i>Pertinent Information</i>	<i>1970-72</i>
Sanitary inspections .....	5,891
Samples collected .....	5,467
Analytical determinations performed .....	13,522
Consumer complaints investigated .....	456
Suspensions of plant operations .....	12
Embargoes .....	377
Destructions of damaged goods .....	197
Value of destructed goods .....	\$1,355,733
Value of damaged goods released for salvage or reconditioning .....	\$ 109,085
Value of damaged goods released for use in animal feed .....	\$ 13,564

## MICROBIOLOGY BRANCH

The Microbiology Branch was organized as an analytical service branch to the FDC, pesticide, and feed programs, the purposes being: (a) to supply analytical assays of type and numbers of organisms in foods, human drugs and cosmetics; (b) measurement of the bactericidal strength of registered germicides; (c) assessment of the vigor of biological pesticides, e.g., *Bacillus thuringiensis* spores; and (d) quantitation of antibiotics in commercial animal feeds. As the Branch was formed in early 1971, the program is only partially established. Presently, a survey is being made of the general spectrum of foods sold in the State in order to pinpoint those areas of greatest concern. Evaluation of germicides and biological pesticides is to begin immediately upon

renovation of a section of the Agriculture building previously used by the Markets Division.

The primary objective of the control, regulation, and inspection of foods is to give assurance that such foods will be pure, healthful, and of the quality claimed when received by the consumer. Microbiological analysis is an integral component of such a program. Our concepts of food sanitation have changed greatly in recent years. We are interested not only in visible or physical cleanliness, but also in bacteriological cleanliness. Inspection of food plant processing facilities achieves physical cleanliness. The other part, the hidden unsanitary condition or the potential hazard due to contamination by organisms which can cause infections and intoxications, can only be detected by laboratory analysis.

During the current biennium, the Microbiology Branch handled 2,520 food samples and performed 14,863 analyses. Seventy-nine consumer complaints (included in the above total) were referred to this section. The complaints ranged from those persons alleging spoilage due to mold and bacterial growth to those claiming sickness or allergic reaction from consuming a certain food. The most common complaint food item was canned foods. This was undoubtedly engendered by the death of a New York man in July 1971 following consumption of Bon Vivant Vichyssoise which was contaminated with *Clostridium botulinum* toxin. Other foods implicated in complaints were soft drinks, bakery products, meats, sandwiches and salads.

Microbiological surveillance of official samples revealed problems with such foods as frozen meat and poultry pies, sea food products (especially shrimp and stuffed flounder with crab meat), certain types of sandwiches, and prepared salads (chicken). These foods commonly contained such unsanitary indicator organisms as *E. coli*, yeast, mold, and/or staphylococci, the latter of which is a causative agent for one type of food poisoning. Manufacturers were informed of these findings and necessary steps were taken to correct the situations.

Other activities of the Branch involved bioassay of pesticide-treated seed found comingled with soybeans and other food grains (see Food, Drug and Cosmetic Branch). Forty-one samples were investigated for such adulteration.

<i>Pertinent Information</i>	<i>1970-72</i>
Official samples obtained . . . . .	2,441
Consumer complaint samples . . . . .	79
Analytical determinations performed . . . . .	14,863



## PESTICIDE BRANCH

Pesticides are intimately involved in the annual production of over \$1.4 billion in crop and animal products in North Carolina. Additionally, pesticides are routinely used to control pests of human health significance, such as flies, mosquitoes, mice, and ticks. It is estimated that approximately 70 percent of these products are used on farmlands while the remaining 30 percent are used by homeowners, gardeners, and governmental agencies.



Officers of the Pesticide Board are left to right, Dr. Tom Linton, Chairman; John Williamson, Vice Chairman and Billy Buffaloe, Secretary.

*Functions Under the Law*

The 1971 General Assembly enacted a new law, the N. C. Pesticide Law of 1971, which superseded both the Insecticide, Fungicide and Rodenticide Act of 1947 and the Aerial Crop-Dusting Law of 1953. This new law embodied the major characteristics of both the earlier laws, while extending the authority of the State in regard to control of pesticide usage. A new seven-man Pesticide Board was created as the policy-making body for this law. Administration of the law and such rules, regulations and policies as established by the Board remained with the Commissioner of Agriculture. As technical counsel to the Board, a fifteen-man Pesticide Advisory Committee was provided.



The new law deals with two rather broad and generalized areas: (a) the economic aspects of pesticides (i.e. misbranding and adulteration), to which the 1947 law addressed itself; and (b) control of the use, sale, distribution, handling, transport, storage, display and/or disposal of pesticides.

Under support for this expanded program, the Division has established the nucleus for a pesticide field inspection force, augmented its capabilities for laboratory analysis through increased personnel and more sophisticated equipment, and begun plans for placing large portions of the pesticide regulatory data into a computer program.

*Adulteration and Misbranding.* In effect, the economic section of the law guarantees a purchaser of the quality of the product received. Registration of all pesticide products is required prior to marketing in the State. The labeling for all candidate products is reviewed for compliance with the various requirements in the misbranding section of the law, such as name and address of the manufacturer or distributor, proper directions for use, adequate warning statements for safety of the user, first aid treatments or antidotal statements for highly-toxic materials, proper product name, net contents, etc. Furthermore, field inspectors are charged with visiting the various pesticide sales outlets in the State to acquire samples for chemical analysis, thus guaranteeing the absence of adulteration. Misbranded products found on the market are placed under "stop-sale," until remedied. Those products found by laboratory analysis to be adulterated by reason of active ingredient deficiency are subject to levy of monetary penalty under the 1971 Law. The 1947 law allowed only for removal from the market or destruction of such products.

A recent incident will adequately illustrate misbranding of a product. During a routine inspection in an Eastern North Carolina farm chemicals outlet, an inspector noted that one-pound cans of methyl bromide fumigant appeared to vary significantly in weight. Followup by accurate weighing of each of 508 containers indicated that 127 of the cans were short from 3 to 16 ounces in active ingredient. The product was thus misbranded, in that the labeling indicated the presence of 16 ounces of pesticide formulation. It could not be ascertained whether the containers were underfilled at time of processing or if the seals were corroded or had been defective; however, the product was at least 16 months old at time of incidence, and the particular type of seal used was suspect based on previous experience. A voluntary recall of the remaining

product was made by the retail distributor, amounting ultimately to 2,075 one-pound cans. The basic manufacturer was allowed to transport the product to its Arkansas processing facilities for reclamation or disposal.

Product adulteration is a continuous and perplexing problem. As previously mentioned, the most common fault is a deficiency of active ingredient, either through underformulation by the manufacturer, or ingredient degradation while on the market shelf. A less frequent but convenient route for the unethical formulator is the substitution of a cheaper or more available agent for a particular ingredient. Such an incident occurred in early 1972 involving a product registered with guarantees for methyl parathion, EPN, and toxaphene. Approximate to this time, there occurred a shortage in supply of methyl parathion. The Division was advised by a confidential source that the manufacturer was likely substituting a portion of the methyl parathion with EPN. While the latter was a more expensive ingredient the effectiveness of the formulation may well have been reduced by this change in ingredient ratio. In several of the chemical methods used for formulations assay, it is impossible to distinguish between EPN and other compounds, thus making adulteration difficult to uncover routinely. By combination of certain of these chemical methods with the rather new and specific technique known as gas chromatography, however, EPN can be confidently determined. In the case at hand, the product was found to be approximately 10% deficient in methyl parathion. By allowing the formulator to know that capabilities for detection of such adulteration are at hand, the likelihood of such future "innovations" was decreased.

Approximately one of every five samples obtained by the Branch during the biennium was either adulterated, misbranded, or non-registered.

*Control of the Sale and Use of Pesticides.* As a result of public expressions of concern that the 1947 pesticide law was failing to provide proper guarantees that the environment was not being permanently and irreparably harmed, the 1971 Legislature imposed sweeping changes in control of sale and use of pesticides in the State. While recognizing that pesticides are integral to production of adequate supplies of food and fiber, as well as protecting human health, the law stressed that misuse of pesticides must be controlled so as to avoid acute or chronic hazard to man and the environment.

The Law vested in the newly-created Pesticide Board the authority to establish such things as : (a) a list of "restricted use" pesticides, that is, those pesticides which in the judgment of the Board are, because of toxicity, persistence, or other factors, too hazardous to man, animals or the environment as to preclude some restriction on their use; (b) classification, testing, and licensing of pesticide applicators, dealers, and consultants; (c) rules and regulations concerning methods of application; (d) a reporting system in which the pesticide sales outlets must report volumes of sales of any pesticides required; and (e) a sampling plan to assure that products are used in accordance with any Board restrictions.

#### *Regulations Established under the 1971 Pesticide Law*

Under the new law, the Board has promulgated regulations pertaining to:

- (a) permitted analytical variances from the active ingredient guarantee;
- (b) effective dates for licensing of pesticide applicators (ground and aerial), pesticide dealers, and pest control consultants;
- (c) classifications for licensing of pesticide applicators;
- (d) designation of classifications in governmental units or agencies required to be licensed;
- (e) financial liability requirements of pesticide applicators;
- (f) restricted-use pesticides (approximately 65 in number).

To date a list of approximately 1500 possible pesticide dealers and 1500 ground pesticide applicators has been accumulated. One person at each dealer location and one applicator representing each ground pesticide application business must be qualified and licensed prior to January 1, 1973, if they are to continue to operate in their respective business.

Licensing of aerial contractors and applicators was continued as provided under the 1953 aerial applicator law until such time as training courses can be established by Extension Service personnel at N. C. State University. For the first time, all aerial application equipment was examined for adjustment and wear prior to issuance of licenses to contractors and/or pilots.

#### *Accident Investigations*

Branch personnel routinely investigate all reports of human injury, pesticide spillages, fish kills and other cases involving damage to humans or the environment. These investigations are



coordinated with other governmental bodies such as the Environmental Protection Agency, State Board of Health, and the Department of Natural and Economic Resources.\*

*Pertinent Information*

	1970-72
Products registered .....	9,310 (1970-71 - 4,854) (1971-72 - 4,456)
Inspections performed .....	3,602
Official samples obtained .....	3,159
Analytical determinations performed .....	6,542
Adulterated samples .....	223
Samples in compliance upon assay .....	91.5%
Stop sales issued (misbranding and non- registration) .....	631
Aerial contractors licensed .....	94
Aerial applicators licensed .....	194
Aircraft registered .....	166

\*Under regulation established on the date of August 24, 1972, any person using a restricted pesticide contrary to the label directions registered with the Department is subject to prosecution.

### FEED BRANCH

The Feed Branch administers the North Carolina Feed and Canned Dog Food Laws and the associated rules and regulations thereunder. The objectives of this control program are: (a) protection of livestock and poultry feeders as well as pet owners by assuring them of supplies of feed and pet food of satisfactory quality, adequately and accurately labeled; (b) the protection of manufacturers from dishonest competition; and (c) safeguard of the health and safety of the consumer of animal products by reducing the possibility of product contamination with drugs, hormones, or other hazardous substances. The time has passed when misbranding or misuse of feedstuffs would affect only the user through a decrease in profits. Feed additive residues in meat, milk and eggs, resulting from improper labeling, careless formulation, or misuse of feedstuffs containing additives, directly affects the safety of the consumer. The Feed Branch is aware of its

responsibilities in this regard and is making every effort to improve its capabilities in the area of consumer protection.

### *Functions under the Law*

Registration is required of all commercial feeding stuffs and canned pet foods prior to sale or distribution in the State. Customer formula feeds are exempt from registration. Labeling from candidate products is reviewed as to compliance with the misbranding sections of the law and regulations; i.e., name and address of manufacturer, names of ingredients present, guarantees of protein, fat, fiber, and such other components as the Board of Agriculture designates, net contents, proper directions for use (particularly in the case of feeds containing drugs or non-protein nitrogen sources), adequate warnings against misuse, and withdrawal periods prior to slaughter.

Manufacturers or distributors of feed and canned pet food must also obtain a reporting permit. Tonnage reports must be submitted at periodic intervals along with inspection fees based on these reports.

A State-wide field inspection force is maintained for checking feed and canned pet food labeling and other items, collecting samples for analysis and investigating complaints from feed and canned pet food users, dealers, manufacturers or others.

Feed and canned pet food samples are analyzed chemically and by other means to ascertain conformation to the manufacturer's guarantee for protein, moisture, drugs, etc. Microscopic examinations are made to discern the presence of ingredients declared on the product label, or any worthless or less valuable adulterants. Increased use of feedstuffs containing drugs, hormones, antibiotics and other additives in both prophylactic and therapeutic quantity has required lengthier laboratory procedures, more sophisticated equipment and more efficient utilization of facilities; consequently the average time required to complete a sample analysis has approximately doubled in recent years.

Reports of analyses (official or unofficial) are made to all appropriate parties (dealers, manufacturers, complainants, etc.). Penalties are assessed against all lots of feed deviating significantly from guarantee. Insofar as possible, consumers of such feed are reimbursed for the discrepancy. If the users cannot be found, the penalty payments are made to the Department to be held in escrow to the users credit. If no further claim is made within twelve months, the assets revert to the Agriculture Fund.

Reports on official samples exceeding reasonable analytical variance from guarantee are published periodically in the Agricultural Review. A summary of all analyses is published annually in the Feed Bulletin.

Other violations such as unregistered or misbranded products are handled by appropriate measures such as "stop sale" orders.

The work of the biennium shows that in general the feed and canned pet foods maintained normal standards and quality. Protein deficiencies and excessive fiber were the most frequent irregularities. Drugs and other feed additives continue to pose problems and were frequently deficient or excessive in feeds with a drug claim on the label.

There are a number of trends which indicate a growing degree of difficulty in maintaining adequate control of the feed supply. Cross-contamination of feeds with drugs or other additives appears to be occurring more frequently. Additionally, an increasingly larger percentage of commercial feedstuff is being distributed via bulk shipments. Moreover, liquid feed supplements containing potentially hazardous sources of non-protein nitrogen are gaining in popularity in the cattle industry. The use of medicated feed has been increasing; yet at the same time there are movements afoot to ban the use of certain drugs and growth promoters used in animal feeds because of evidence of possible adverse effects on human health caused by residues in meat, milk and eggs.

### *Changes in Law and Regulations*

The 1971 General Assembly modified the labeling requirements of the Canned Dog Food Law, providing that all product guarantees would be in a form prescribed by the Board, and of such content as to properly advise the consumer of composition and to support labeling claims.

The Board of Agriculture took the following actions:

- (a) adoption of the uniform pet food regulations of the American Association of Feed Control Officials;
- (b) established a chemical standard for low-fiber roughage-concentrate dairy feed;
- (c) deleted the maximum allowable amount of crude protein provided in the complete dairy feed standard;
- (d) amended the regulation pertaining to non-protein nitrogen sources to allow for use of biuret, as well as for non-protein nitrogen in excess of 8.7% or one-third of the total crude



protein guarantee in concentrates, premixes and supplements when these products bear proper directions and warnings, and are further mixed with other feed ingredients prior to feeding, or when these products are designed so as to be dispensed to the animal in a manner which restricts daily intake to non-toxic levels.

A study is underway to determine what action is necessary and desirable to increase the capability of the Feed Branch in the regulation and control of medicated feed and in surveillance over feed and feed ingredients for pesticide residues, polychlorinated biphenyls (PCB's), aflatoxins, disease-causing organisms, other residues and cross-contamination.

<i>Pertinent Information</i>	<i>1970-72</i>
Products registered .....	10,367
	(1970-71—5200)
	(1971-72—5177)
Inspections performed .....	14,529
Official samples obtained .....	7,417
Unofficial samples obtained .....	570
Analytical determinations performed .....	41,593
Adulterated samples .....	2,195
Samples in compliance upon assay .....	70.4%
Stop sales issued (misbranding & non- registration) .....	197
Penalties assessed* .....	503
Amount paid to consumers .....	\$4,261.62
Amount reverting to Agriculture Fund .....	\$7,885.30

\*No penalties are presently assessed against canned pet foods.

#### FERTILIZER BRANCH

Maintenance of an adequate, sound supply of chemical fertilizers, liming materials, processed and packaged manures and mulches, and landplaster is essential to stable agricultural production in the State. Significant changes have been occurring in the fertilizer industry in recent years. There has been a growing trend toward handling of dry products in bulk rather than bag due to cost savings. Much of the bulk fertilizer is being moved directly to the point of use and spread on the fields as a part of the purchase agreement.

There is also a move toward formulation of higher analysis fertilizers, together with micronutrient additions. Production of such standard fertilizers as 5-10-10 and 3-9-9 dropped from 435,845 and 339,118 tons, respectively, in 1963-64 to 243,929 and 232,728 tons in 1970-71. Concomitantly, production of 10-20-20 rose from 19,819 tons in 1963-64 to 81,186 tons in 1970-71. Such new formulations as 8-24-24 (5,588 tons in 1965-66; 15,562 tons in 1970-71) appear to have found a place in the market.

Nitrogen solutions, liquid ammonia and slurries are also gaining in popularity due to the aspect of bulk handling and spreading. The use of nitrogen solutions tripled from 110,419 tons in 1963 to 308,248 tons in 1970-71. The arrival of such products has placed a new burden on the already overburdened analytical capabilities of the Branch, as these formulations cannot in some cases be adequately sampled or assayed without modification of existing methods.

### *Functions under the Law*

The fertilizer and lime and landplaster laws require that all commercial products be registered prior to sale in the State. Product labeling is reviewed to ascertain compliance with the requirements of each law. Manufacturers or distributors of fertilizer must also obtain a reporting permit prior to registration and sale of products. Tonnage reports are required to be submitted at periodic intervals. Inspection fees on each ton of fertilizer, liming material, or landplaster sold or distributed are levied by the Department for support of the control program.

Customer-formula fertilizer is subject to all provisions of the law except registration.

A temporary field inspection force is maintained during the months of fertilizer movement only. Inspectors sample fertilizer at any point in the chain of distribution prior to its use or loss of identity. All types and forms of fertilizers are uniformly sampled to maintain a cross-section survey of the total market.

Commercial fertilizers are analyzed for primary nutrient (nitrogen, phosphorous, and potassium), secondary nutrient (sulfur, magnesium, and calcium) and micronutrient (manganese, boron, copper, zinc, iron and molybdenum) content. Liming materials are assayed for calcium and magnesium content, neutralizing ability, and fineness of grind. Landplasters are investigated for the calcium sulfate content.

Upon completion of analyses, reports are issued on all samples collected. Those samples deviating significantly from guarantee are penalized, all penalty money being passed to the user, if possible. Where users cannot be found, the penalty assets revert to the Department of Agriculture operating fund.

Products found to be misbranded or non-registered are issued "stop sales" and remain in this status until requirements of the law are met. Products significantly in violation are on occasion released to the manufacturer for reprocessing or labeling.

*Changes in Regulations*

The Board of Agriculture took the following actions during the biennium:

- (a) Deleted 4-9-3 tobacco plant bed fertilizer from the approved grade list;
- (b) Required industry to have to the Commissioner by May 1 of each year any requests for changes in the grade list;
- (c) Made customer-formula fertilizers subject to all requirements of the law except registration;
- (d) Amended bag weights to allow for sale of 200 pound, 167 pound, 125 pound, 100 pound, 80 pound, and any size bag of fertilizer under 80 pounds;
- (e) Established a third category of fertilizer grades, "specialty fertilizers," primarily for turf growers, golf courses and home yards;
- (f) Deleted the requirements for magnesium guarantees in tobacco fertilizers;
- (g) Voted to request the Legislature to delete from the Fertilizer Law:
  - (1) Magnesium requirements for tobacco fertilizers;
  - (2) Requirement for a maximum guarantee of sulfur in tobacco fertilizers;
  - (3) Acidity-basicity statements.

*Pertinent Information*

	1970-72
Products registered .....	5,999
	(1970-71—3049)
	(1971-72—2950)



Inspections performed .....	9,267
Official fertilizer samples obtained .....	19,008
Unofficial samples obtained .....	14
Official liming material and landplaster samples obtained .....	587
Analytical determinations .....	164,989
Adulterated samples .....	4,804
Stop sales issued (misbranding and non-registration) .....	405
Samples penalized .....	4,802*
Amount paid to consumers .....	\$ 52,814.89*
Amount reverting to Agriculture Fund .....	\$232,217.48

\*Does not include results from 2200 samples for 1971-72 fiscal year, which were not completed at time of report preparation.

#### ANTIFREEZES

The antifreeze law was enacted in 1949 to provide a mechanism for removal from the market of products containing components injurious to engine cooling systems (sodium chloride, certain petroleum distillates); exhibiting strength, quality or purity less than represented as being; or bearing improper, false or misleading labeling. The recent advent of so-called "summer coolants" give indications of being antifreeze under another name. Unfortunately, in certain instances these products sold strictly as "summer coolants" rather than as "antifreeze-summer coolants" contain quantities of water in excess of that amount necessary for dispersal of inhibitor ingredients, making such items rather profitable ones. Traditionally, North Carolina has refused to register antifreeze products with more than a minimum quantity of water. The definition in the law for the term "antifreeze" has been held not applicable to the "summer coolants" *per se*, however.

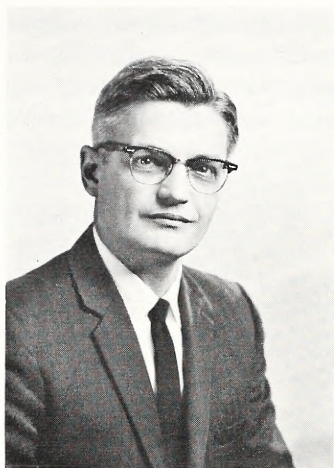
Antifreeze products are registered annually by the manufacturer or distributor. Such products are assayed by the Division laboratories to ascertain absence of adulteration. Product labeling is reviewed to assure no misbranding exists.

The overwhelming bulk of antifreeze used in motor vehicles presently is of the "permanent" type, which is based on ethylene glycol for lowering the freezing point of the radiator mixture.

Very little of the methyl alcohol-type antifreeze is used, since the antifreeze solution is frequently carried throughout the summer to prevent “ice-up” when using air conditioners, to raise the boiling point for better heat exchange capacity in high speed, high temperature driving, and to prevent rust and scale from forming inside the system.

*Pertinent Information*

	1970-72
Brands registered .....	177
	(1970-71—88)
	(1971-72—89)
Manufacturers or distributors .....	61
	(1970-71—27)
	(1971-72—34)



## DAIRY DIVISION

LEONARD F. BLANTON

*Director*

The Dairy Division is responsible for administration of the North Carolina Dairy Laws dealing with the production, processing and distribution of milk and dairy products. The major purpose of this program is to safeguard the consumer's health and economic interests by insuring that adequate supplies of high quality milk and dairy products are available to the people of this State.

This purpose is achieved through a program of inspection, laboratory analysis, licensing, equipment approval, label compliance approval, examination and training of samplers, weighers, testers and frozen dessert manufacturers.

In addition to the consumer protection aspect of the program, all dairy farmers are served by the provisions of the Babcock Test Law and the animal health regulations. Dairy processing plants and retail frozen desserts manufacturers are served through the administration of definitions and quality standards which



cover dairy products, equipment construction and operational procedures.

Activities during the biennium are given in the following sections:

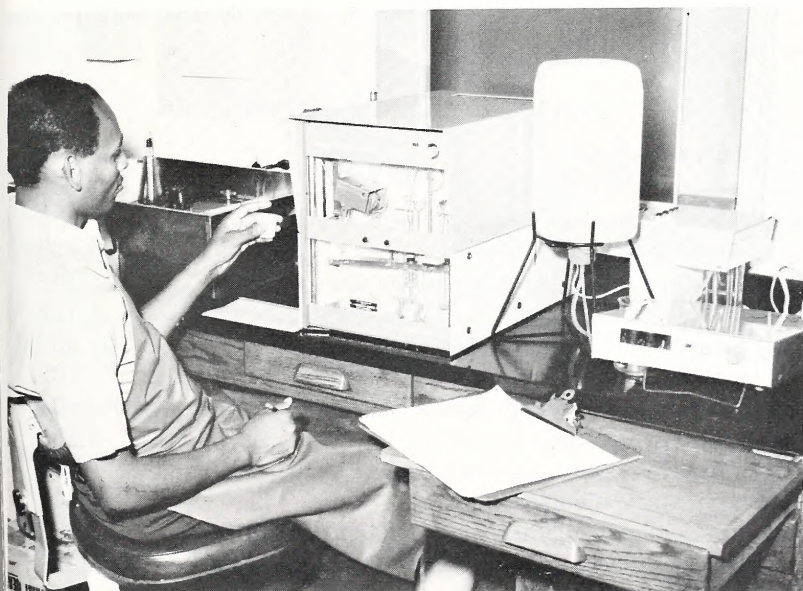
#### ICE CREAM AND FROZEN DESSERTS

The inspection of soft serve and milk shake dispensing freezers and the analysis of their products continues to take a large share of the Division's workload. The central laboratory analyzed 14,668 frozen dessert samples during the period, and 3,792 inspections of these freezer installations were made.

Some of these establishments on the outer banks and in the resort sections of the mountains are very busy during the tourist season. Quality problems usually occur at this time, and more attention is given to them during these months.

#### BUTTERFAT SAMPLING AND TESTING

The checktesting program included 51,140 samples during the period, and resulted in ordering 776 producer pay tests to be changed. This program insures that all tests for pay purposes are done accurately, by licensed testers.



The Milko-Tester.

A new Mark III Milko-Tester was installed in the central laboratory in 1972, which makes it possible to increase the number of checktests performed.

This instrument is also used to provide service testing for the North Carolina Dairy Herd Improvement Association on a fee basis. It will supplement the D.H.I.A. testing program conducted in our laboratory at Fletcher, by relieving them of some of their workload from the eastern part of the State.

The Milko-Tester at the Fletcher laboratory is being purchased by the North Carolina Dairy Herd Improvement Association and the personnel doing this testing are employed by them. Their program now includes better than 24,000 samples a month at times.

### PESTICIDES AND CHEMICAL RESIDUES

Samples of milk are collected from each farm tank truck twice each year for pesticide and chemical residue analysis. During 1971 only one milk supply was found with a DDT residue. This milk was excluded from the market until the residue level had been reduced to an acceptable level.

Two farms were found to have silos contaminated with polychlorinated biphenyls. This compound was a component of a silo sealer used at the time of construction, and found its way into the silage. In both cases, these silos can no longer be used because the PCB continues to leach out year after year.

### 1970-1972 BIENNIAL REPORT

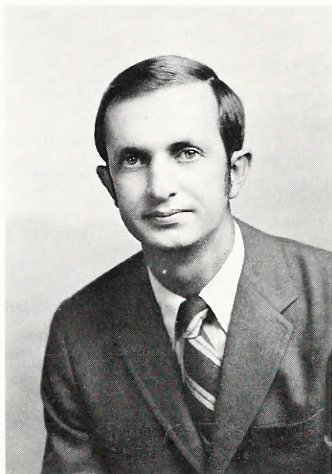
Butterfat check tests .....	51,140
Plant composite check tests .....	4,109
Plant investigations (Butterfat check testing) .....	288
Finished milk products analyzed .....	4,623
Ice cream and frozen dessert samples analyzed .....	15,142
Cryoscope determinations .....	1,711
Pesticide assays made .....	655
Milk testers' licenses issued .....	92
Milk testers' examinations given .....	34
Milk samplers' licenses issued .....	291
Milk samplers' examinations given .....	100
Plant laboratory inspections .....	147
Ice cream & dispenser milk shake machines inspected ...	3,792
Soft Serve & dispenser milk shake machines licensed ...	1,000
Ice Cream plant inspections—wholesale .....	310
Ice Cream wholesale plants licensed .....	65

Dispenser milk shake & soft serve operations closed for non-compliance .....	111
Gallons of milk embargoed, adulterated .....	4,719
Ice cream & mix embargoed which failed to meet standards (gal.) .....	485.5
Milk testers placed on probation .....	—0—
Milk samplers placed on probation .....	—0—
Out-of-state shippers issued temporary permits to ship milk into N. C. ....	4
N. C. plants receiving milk from out-of-state sources ....	11
Butterfat tests changed .....	776



Bacteriological plates are analyzed to determine quality of dairy products.





## ENTOMOLOGY DIVISION

ALFRED S. ELDER

*Director*

Contrary to the implications of its name, the Division of Entomology does not deal solely with insects. In administering the North Carolina Plant Pest Law, the Vegetable Plant Law and the Honey and Bee Law in our state, the division deals in the regulation, management, suppression, control or eradication of many types of plant and bee pests. These pests may be insects, mites, nematodes, bacteria, fungi, viruses, mycoplasmas, noxious weeds, parasitic plants or other invertebrate animals or plant parasites which are capable of damaging plants or plant products. By preventing the introduction and dissemination of such pests into our state we can help to preserve both the economic and aesthetic quality of our environment for the benefit and enjoyment of all our citizens.

During the biennium the Division of Entomology was reorganized so as to better serve the public. A technical staff was formed to include an entomologist, plant pathologist and plant ecologist to assist our regulatory staff in the more efficient performance of their duties and to adapt newer techniques into our overall program. The regulatory staff was divided into eastern and western districts with offices in Goldsboro and Asheville.

In order that all North Carolinians better understand the services which we offer, the division has expanded its educational exhibiting. The largest exhibit was placed each year at the very popular Southeastern Flower and Garden Show in Charlotte and the division continued its participation in the Honey and Bee Section at the North Carolina State Fair.

Many of the Entomology Division's programs are conducted cooperatively with the Plant Protection and Quarantine Programs, Animal and Plant Health Inspection Service, United States Department of Agriculture. Other collaborators and cooperators include plant pest regulatory agencies of other states, the North Carolina Agricultural Extension Service, the North Carolina Agricultural Experiment Station, other state and federal agencies and many private organizations and societies. The outstanding cooperation of all is deeply appreciated and is what allows our programs to operate efficiently.

Some of the major projects and functions of the Entomology Division are as follows:

#### PLANT PEST LABORATORY AND SURVEY

The reorganization of the Entomology Division has resulted in a wider use of our taxonomic insect collection and library. The identification and control recommendation service has continued and been reorganized. The cataloguing of new North Carolina species and general curating of the one million specimen insect collection also have continued. Our detection and survey work for introduced pests has increased with about 50 light trap collections received from port and airport areas and examined for foreign pests. An insect parasite and predator survey has been started in preparation for increased biological control and pest management work in the future.

Our capabilities in plant pathology, nematology, biological control and pest management were greatly increased with the addition of a plant pathologist and plant ecologist to our staff. We have expanded our methods improvement work considerably. Re-

cent restrictions on certain pesticides used in our programs has made it necessary for us to screen some fungicides and insecticides for possible incorporation into our regulatory program. Biological and epidemiological studies are also being carried out on some of our quarantined pests in order for us to more effectively regulate them. We are currently examining all division programs to see if we can adopt new integrated control management techniques and as these become available, incorporate them into our regulatory and control programs.

### PEST MANAGEMENT

The Tobacco Pest Management Pilot Project is a cooperative program of the North Carolina Department of Agriculture, the North Carolina Agricultural Extension Service, the United States Department of Agriculture, and the North Carolina Agricultural Experiment Station. The basic objective of the pilot project is to establish a more ecologically, economically, and socially acceptable system for protecting tobacco from insect pests. Persons such as school teachers, high school and college students are employed during the growing season for this crop to survey each field within the management areas weekly. Data collections in each field consist of population levels of pest and selected beneficial species of insects, plant damage, cropping and cultural events concerning the crop, and pesticide applications. Each week all the data from each field are coded, compiled and stored on computer tapes for future use.

Tobacco growers are informed when pest levels in a field exceed the economic threshold and are advised as to proper control measures. Efficient chemical control on an actual need basis creates a more favorable balance of beneficial and pest insects. This judicious use of insecticides coupled with sound cultural practices such as good sucker control and early stalk destruction on an area-wide basis can cause a suppression of the total insect population in an area.

Three geographically different areas were selected for the area-wide project. Area I is located in parts of Columbus and Bladen counties; Area II in parts of Wilson and Wayne counties; and Area III in part of Surry County.



## Information on Project Areas

Area	Geographic Size	Farms		Fields		Acreage	
		1971	1972	1971	1972	1971	1972
I	230 sq. miles	618	595	1,078	1,260	2,533	2,650
II	145 sq. miles	685	690	1,369	1,391	4,244	4,305
III	60 sq. miles	228	235	629	689	1,255	1,453

In 1971, the overall project results averages indicate that the average number of insecticidal applications per field (2.4) was about three times as high as the average number of threshold level reports for the pest insects per field (0.7). An increasing number of tobacco farmers are beginning to follow the recommendations of the program. At the end of three years, when the pilot phase ends, it seems very likely that the total number of insecticidal applications will be reduced with the resultant increase in natural pest control.

During the latter part of the biennium a similar project was initiated on cotton. This Cotton Pest Management Project will involve two areas, one near the Virginia border and one near the South Carolina border and will be cooperative among the same agencies as the tobacco project.

## VIROLOGY - NEMATOLOGY

Early in 1972 the Board of Agriculture adopted permanent regulations designed to prevent the importation of potato virus Y (PVY) into North Carolina on tomato plants from southern Florida. This followed two years of a temporary quarantine during which time PVY was not observed or reported in North Carolina. This disease is of much concern to farmers in North Carolina due to damage it can cause if transmitted to tobacco. We have had reports of the virus again being present in five counties in North Carolina during the summer of 1972 and are attempting to determine the mode of entry of this virus into our state and if further regulations are needed to keep North Carolina free of PVY.

Since 1966, the states of Alabama, Florida, Georgia and Oklahoma have had quarantines on North Carolina peanut seed because of peanut stunt virus (PSV), a seed-borne virus disease. During the biennium certification as to apparent freedom from PSV in seed peanuts was made in cooperation with the North Carolina Crop Improvement Association, Inc. The combination of survey and serological determination results in a statement as to the presence or absence of PSV in seed peanut fields in North Carolina. This disease is known to occur in essentially all peanut

growing areas in North Carolina but has caused no major crop losses. We are continuing our efforts to learn more about this disease and are supplying information to those states having quarantines against our seed.

During the biennium, division personnel cooperated with USDA personnel in the nationwide biometric survey for detection of *Heterodera rostochiensis*, the golden nematode, a potential pest to the Irish potato industry. Survey statistics are as follows:

	1970-71	1971-72
Grader and soil samples collected . . .	312	156
Grader and soil samples examined . . .	381	235
Acres surveyed . . . . .	361	290
All samples were negative for the golden nematode.		

Investigations are also under way to determine the occurrence of other nematodes, especially cyst nematodes, in this state and their potential threat to North Carolina agriculture.

Inspection for presence of *Ditylenchus dipsaci*, the bulb and stem nematode, in narcissus bulbs being exported from North Carolina is carried out as a part of our plant inspection program.

#### HONEY AND BEE INDUSTRY

Beekeeper demand for bee inspections increased during the past biennium. Increased demand for bee pollination service, an increase in the number of bee poisoning cases, and increased membership in the beekeepers organizations are responsible for this.

During the biennium our bee inspectors inspected some 20,000 colonies of bees for disease. Health certificates were issued to 29 beekeepers for sale of queen and package bees or transportation of bees to other states. The incidence of American foulbrood disease continued to decline during the biennium.

Our inspectors are now cooperating in making inspections for beekeepers who apply for pesticide indemnity payments under the USDA, Agricultural Stabilization and Conservation Service Beekeeper Indemnity Payment programs.

NURSERY AND NATIVE PLANT INSPECTION

The division enforces nursery regulations designed primarily to prevent the introduction or spread of plant pests by means of nursery stock. This is one important part of our overall plant pest control program. The program also protects consumers from pest infested nursery stock, assists the nursery industry by preventing the buildup of plant pests, and assures a source of healthy plants for use in beautification and environmental improvement. This is accomplished through a program of inspection and certification of nursery stock and native plants. The nurseries and plant dealers certified during the biennium are as follows:

	1970-71	1971-72
Nurseries .....	1,418	1,600
Dealers .....	728	1,106

The native plant inspections and certifications are as follows:

Native plants inspected .....	393,356	449,360
Trailer loads inspected .....	310	286
Truck loads inspected .....	1,388	1,770
States involved .....	30	30

VEGETABLE PLANT INSPECTIONS

The vegetable plant law is designed to insure that our growers import vegetable plants from other states that are healthy and free of pests and diseases. Some 5 million (in 1970-71) and 4 million (in 1971-72) vegetable plants were inspected and checked for proper certification from other states. On November 9, 1970, an amendment was added to this regulation requiring that all vegetable plants shipped into this state will not only be disease and insect free but that they will be certified also as to varietal purity.

EXPORT AND IMPORT INSPECTIONS

Phytosanitary certificates were issued for the export of various commodities to foreign countries such as peanut seed, peony roots, corn seed, walnut seed, sweet potatoes, orchid plants, grass seed, tobacco, mistletoe, frazier fir seed, tobacco seed, oak logs and lumber, strawberry plants, pepper plants, pigeon pea seed, sorghum seed, soybean seed, tomato seed, clover seed, pine seedlings,



cotton seed, gladiolus corms, popcorn seed, sundew plants, crowder pea seed and sugar beet seed.

Import permits were granted to import insects, fungi, nematodes, plants and soil for various scientific purposes. Imported nursery stock was kept under two year postentry quarantine with periodic inspections to insure that foreign pests were not brought into North Carolina. Our inspectors also cooperated with USDA port inspectors to determine that imported materials were free of such pests as khapra beetle, Formosan termite and giant African snails.

### GYPSY MOTH (*Porthetria dispar* Linn.)

The gypsy moth was first trapped in disparlure baited traps at five locations in North Carolina during 1971. In addition, a larval cast skin and a subsequent egg mass were found on a trailer.

#### Locations Where Trap Catches or Finds Occurred

County	Date	Type
Robeson	July 20 & 26, 1971	2 male moths in traps
McDowell	July 29, 1971	1 male moth in trap
Dare	July 30, 1971	1 male moth in trap
Vance	August 12, 1971	1 male moth in trap
Northampton	August 31, 1971	1 male moth in trap
Pitt	August 2, 1971	1 cast larval skin and 1 egg mass
Lee	November 17, 1971	1 cast larval skin

In 1972 some 5,000 gypsy moth survey traps were placed at suspected priority places across North Carolina such as camps and recreation areas, etc. These traps will be monitored every three to four weeks during the summer. These traps were placed as a combined effort by the USDA, Animal and Plant Health Inspection Service; NCDA personnel; U. S. Forest Service and N. C. Forest Service personnel. As of this writing no new moths have been found.

Also in 1972 we trapped all seven positive sites where moths were found in 1971 in an attempt to prevent mating by male moths. We used a grid system of trapping by placing each trap approximately 1/16 of a mile apart over a 1 square mile area centered on the suspect site. These control traps are about one



Gypsy Moth traps were placed all across the state during the summer.

inch in diameter and are baited with the sex pheromone, disparlure. This pheromone is the sex scent used by the female moth to lure males to her. As the male moths are lured to the trap, they become stuck inside the trap and are thus rendered unable to mate.

The Entomology Division is also engaged in an integrated control program to discourage the spread of the gypsy moth. All available control techniques such as the use of manipulations will be used. During 1971, 116,000 *Ooencyrtus kuwanae*, an egg parasite, were released at all locations where the moth was detected. A pupal parasite, *Brachymeria intermedia*, was used during 1972 at all sites. 1,828 adult individuals of this tiny wasp were released. In addition during 1971, three of the sites received aerial applications of hydrophobic paper strips treated with disparlure which are known as "pink confetti." These tiny scraps of paper act as mating deterrents for the male gypsy moth.

The Entomology Division is in the process of establishing a biological control laboratory for the gypsy moth. Two technicians will be employed to rear and evaluate parasites and predators and to investigate other biological agents in controlling the gypsy moth.

## SWEETPOTATO WEEVIL

*Cylas formicarius elegantulus* (Summers)

The sweet potato weevil program has increased a great deal during this biennium. This is indicated in the number of bushels surveyed or checked this past fiscal year as compared to the previous year. New sex pheromone traps were used last fall in the Columbus County area. No sweet potato weevils were found in any of the major sweet potato growing areas in North Carolina.

Intensive surveys were made of the beds, on processing lines, and in warehouses with negative results. As the figures below indicate, more work was done on the sweet potato weevil program in North Carolina this past year than at any other time. A large part of this work was done under the project Four Program whereby the USDA provided funds on a matching basis. We feel by continuing a surveillance and management program with this pest, we will be able to protect this major industry in North Carolina.

	1970-71	1971-72
Bushels surveyed .....	229,378	714,906
Acres surveyed (field) .....	1,435	1,024
Acres surveyed .....	697	622

## RED IMPORTED FIRE ANT

*(Solenopsis invicta* Buren)

The red imported fire ant program has been seriously affected in North Carolina by the restricted use of aerial application of mirex bait for controlling this pest. Approximately 30,000 IFA mounds have been hand treated with mirex during the biennium to control this pest. The following counties in North Carolina are infested with this pest: Brunswick, Carteret, Columbus, Craven, Jones, Onslow, Pamlico and Robeson. Some of the red imported fire ant work accomplished is as follows:

	1970-71	1971-72
Acres surveyed (detection) .....	56,373	90,875
Acres surveyed (delimiting) .....	1,099,149	2,303,052
Acres treated with Mirex bait (by hand) .....	75	1,470
Mounds treated with Mirex bait (approximately) .....	10,000	20,000



WHITE-FRINGED BEETLE  
(*Graphognathus* spp.)

The white-fringed beetle quarantine was revised on June 14, 1972. The entire counties of Anson, Rowan, Cabarrus, Stanly, Union, Wake, Wilson, Wayne and most of Lenoir are under regulations along with portions of some forty-one other counties. Because of the restricted use of pesticides, especially dieldrin, and the exhaustion of funds, especially from the USDA, this pest has continually spread during this biennium. It is found as far west as Polk and Rutherford counties. The figures listed below indicate this fact in that acres found infested have almost doubled from the 1970-71 period to the 1971-72 period. Some of the white-fringed beetle work done during this biennium is as follows:

	1970-71	1971-72
Acres surveyed . . . . .	23,558	18,380
Acres found infested . . . . .	3,746	7,060
Acres treated with pesticide . . . . .	91	81
Inspections made . . . . .	1,514	3,162

SOYBEAN CYST NEMATODE  
(*Heterodera glycines* Ichinohe)

The soybean cyst nematode quarantine was revised on June 14, 1972. A total of twenty-four counties in eastern North Carolina are regulated for this pest.

Our resistant soybean varieties continue to break down in the resistance to this nematode. This makes our regulatory program of more importance in trying to protect the soybean industry from this pest. The USDA funds have been drastically reduced on this program and the reflection of this is indicated in the figures below, especially in the number of acres surveyed. Most of this program is now NCDA responsibility. Some of the soybean cyst nematode work accomplished is as follows:

	1970-71	1971-72
Acres surveyed . . . . .	63,682	4,445
Soil samples collected . . . . .	2,387	18
Soil samples examined . . . . .	2,831	1,002
Acres found infested . . . . .	9,049	2,751
Properties infested . . . . .	80	33

JAPANESE BEETLE  
(*Popillia japonica* Newman)

The entire state is infested with Japanese beetle. The USDA, Animal and Plant Health Inspection Service, regulates and enforces a Japanese beetle quarantine in our state. We cooperate in assisting our citizens in getting their plants, produce, and plant products certified for movement into Japanese beetle free areas of the United States and by recommending control or treatment measures. Some of the work done on this pest is as follows:

	1970-71	1971-72
Truck loads of nursery stock certified	272	310
Truck loads of produce inspected . . . .	1,095	730
Truck loads of cabbage fumigated . . .	264	125
Total inspections . . . . .	3,277	3,937
Commodity, soil or foliage treatments	2,292	2,149
Acres receiving biological control treatment . . . . .	350	150

WITCHWEED  
(*Striga* spp.)

The witchweed control and eradication program first begun in 1956 in cooperation with the USDA, Plant Protection Programs, was continued during this biennium. The witchweed quarantine was revised on June 14, 1972, and now includes parts of twenty-five counties in North Carolina. Some statistics for work done on this program for this biennium are as follows:

	1970-71	1971-72
Acres surveyed . . . . .	289,274	429,156
Acres herbicided (aggregate) . . . . .	318,022	315,528

Biological control of witchweed has been attempted with some promise. Naturally occurring pathogens of witchweed have been isolated and identified and investigations are being made as to their practicality. Pathogens or insects found to be detrimental to witchweed will be investigated through a cooperative program with N. C. State University, USDA and N. C. Department of Agriculture personnel.

Another new development that shows good promise for witchweed control is a machine for the subsurface layer application of herbicide. It has the potential for giving full season witchweed

control with a single application of a herbicide. Several hundred acres have been treated this year with this equipment. The use of dinitroaniline herbicides (trifluralin) in conjunction with the new subsurface layer equipment shows real promise in replacing 2,4 - D for much of the witchweed control treatment.

TRANSIT INSPECTIONS

Our division coordinates this program with the USDA, Animal and Plant Health Inspection Service, and other state and federal regulatory agencies in an effort to check on movement of regulated plants and plant products in order to prevent the spread of pests. As indicated by the following figures, this work has increased tremendously during this biennium. More and more products are being shipped longer distances by various means of transportation and this increases the danger of spreading diseases and pests. This work has more than tripled in the past year but still represents only an extremely small sample of the plant materials in transit.

	1970-71	1971-72
Transit inspections made . . . . .	5,752	17,223

The cereal leaf beetle is one of the new pests of concern in our transit inspections. This is a pest primarily of cereal and grain and in recent years has been found near our borders in Tennessee and Virginia. Another new pest we check for in transit inspections is the giant African snail. Frequent checks are also made for the gypsy moth in the movement of mobile homes, campers and trailers.

OTHER PROGRAMS

Another pest concerning our division is white pine blister rust. The movement of currant and gooseberry plants which are alternate hosts of this disease into our control area was prevented during this biennium in order to protect the white pine from the white pine blister rust disease.

Narcissus bulb inspection and certification was continued with four properties in each year of the biennium being inspected and certified as being free from eelworms and bulb flies.



Our cut flower European corn borer certifications made during this biennium were as follows:

	1970-71	1971-72
Doz. glads cut and inspected .....	740,857	690,572
States involved .....	28	28
Acres of glads inspected .....	207	207

Surveys and detection work was conducted for the cereal leaf beetle and the European chafer. Neither of these pests has been found in North Carolina at this writing. Some other states have the brown garden snail (*Helix aspersa*) under quarantine. We are now conducting a detection survey for this pest in North Carolina.



The Entomology Division prepared several exhibits during the biennium.



## DIVISION OF SEED TESTING

GEORGE E. SPAIN

*Director*

### THE NEED

Plants begin their life and end their life as seeds. With only a few exceptions, our crop plants follow this cycle from seeds, through a vegetative stage and back to seeds, on schedule with the earth's movement which dictates the four seasons. The continuation of life through these processes is never-ending.

Because man's survival depends on seeds and the plants they produce, significant economic value is attached to them. Therein lies the mandate to evaluate seeds for their ability to perform their intended function, according to society's economic criteria.

This quality evaluation, and the marketing regulations attendant upon it, is of special need to all citizens of North Carolina. The service and regulatory activities designed to meet this need are the function of the Seed Testing Division.

## SPECIAL PROBLEMS

Each year of this biennium has brought unusual seed conditions and trying circumstances to farmers in North Carolina. The fiscal year 1970-71 found corn vulnerable to a new and deadly race of an old disease. With only about 25-30% of the seeds available in adapted hybrids which had resistance to Southern Corn Leaf Blight, farmers were forced to plant many acres to non-hybrid seeds, untested hybrid varieties, many of which were imported, and large quantities of recognized hybrids which contained a mixture of resistant and susceptible-type cytoplasm.

Cytoplasmic control of resistance to diseases has been relatively rare. The customary inheritance patterns have been genetically controlled. For this disease hazard, specialized labeling combined with an emergency educational program and inspection service were necessary. During the two years of the biennium, 1541 lots of corn seeds were inspected and test-planted to check on the truthfulness of label statements of cytoplasm identity. The fact that these plantings were planned and announced probably prevented mislabeled lots of seeds from being offered. While isolated problems were found, the hybrid corn seed industry did a creditable job of supplying seeds which were correctly identified.

Hurricane Ginger, coming in the fall of 1971, severely damaged many acres of crops in North Carolina, and the rains which followed added to the loss. Soybeans, cotton, peanuts, and corn were affected.

The effect on seeds of soybeans, cotton, and peanuts to plant the 1972 crop was very damaging to seedsmen and farmers. Many seed production fields were abandoned. Probably more soybean and cotton seeds were transported from other states than were marketed from North Carolina's production. This, again, placed unusual pressure on the Seed Testing Division's inspection and testing program, and resulted in a record number of inspections and laboratory analyses, almost 20% more than in the last biennium. Seed labels were allowed to carry substandard statements of the germination ability in order to have enough seeds to plant the crop. Again, the seed industry as a whole responded with a commendable effort to make planting seeds available, with relatively few serious misrepresentations.

In both years, North Carolina farmers produced near miraculous yields from such poor seed starts. They were alerted to the problems and made the best management decisions possible to compensate for poor quality. Major emphasis by N. C. D. A. was



given to inspections and testing for truthful labeling, regardless of how good or poor the quality of the lots happened to be.

### ROUTINE, BUT NEW EVERY YEAR

The analysis and regulatory efforts may seem routine, but each year finds a given quantity and character of seeds to plant that particular crop. All the motions of the previous year have to be repeated.

One such effort is the inspection and variety verification of all lots of tobacco seeds, conducted jointly with the N. C. Agricultural Experiment Station, N. C. State University. There is a potential for much damage to producers of tobacco, our Number One crop, if mislabeled seeds, especially of disease-susceptible varieties, are prevalent. The tobacco seed producers meet rigid recording and verification requirements, resulting in little, if any, losses to farmers because of seed misrepresentation.

Other crops, as well as lawn seeds, vegetable seeds, and flower seeds are randomly and routinely checked to identify poor lots, and to prevent their sale.

Many of the Seed Testing Division's activities are in support of other divisions or agencies, including the Landscape Division, S.H. & P.W.C., the N. C. Crop Improvement Association, the N. C. Foundation Seed Producers, the Agricultural Stabilization and Conservation Service, and others.

### SUMMARY OF ACTIVITIES

To meet these needs, the Seed Testing Division has carried out the activities listed in this report for the benefit of all citizens of North Carolina:

Seed lots inspected, exposed for sale . . . . .	26,282
Inspectors' samples submitted for further analysis . . .	4,656
Total samples received at laboratory . . . . .	50,397
Total tests of purity and germination made on samples received . . . . .	65,081
Biochemical tests performed . . . . .	1,020
Variety and/or cytoplasm samples collected and planted . . . . .	1,714

The Seed Testing Division has participated in national seed affairs for many years. During this biennium, it hosted the Association of Official Seed Analysts (June, 1971) in Raleigh. A part of the program included a touring group of International Seed Testing Association delegates. Personnel in the laboratory chaired or served on several committees of national organizations.

The director was elected president of the Association of Official Seed Analysts (United States and Canada) for 1972-73, and was also elected president of the Seed Control Officials of the Southern States for 1972-74.



## STRUCTURAL PEST CONTROL DIVISION

RUDOLPH E. HOWELL

*Director*

The Structural Pest Control Division is responsible for the administration and enforcement of the Structural Pest Control Law and the rules and regulations of the State of North Carolina. The purpose and policy of the law is twofold. It protects the public, as well as the pest control industry, from those operators incapable of fair and ethical business practices and safeguards the health and well-being of the consumer. Standards established under the authority of the law help weed out unethical operators. The provisions of the law also require operators to exhibit and maintain professional competence.

The work of this division includes: examining applicants for licenses; licensing and certifying qualified applicants; registering employees of license holders; inspecting chemicals, records, equipment and work of structural pest control operators; and instituting court action against violators of the law.



Inspectors of this division check wood-destroying organisms work, household pest control work and fumigation operations of license holders. Pesticides of license holders are checked to insure that the selection, usage, storage, and labeling of these materials are in conformance with the rules and regulations. In addition, the division uses soil testing field kits to estimate the concentration and dosage of insecticides applied by operators for the prevention and control of subterranean termites.

North Carolina was among the first states to develop and establish a working agreement with the Veterans Administration and the Federal Housing Administration on the issuance of Wood-Destroying Insect Reports by licensed operators on existing properties purchased through these agencies. These reports serve as prerequisites for loan closures.

Information on the division's operations and activities for this biennium is presented in the following sections.

#### EXAMINATIONS

A license is required under the law for each of the following phases of structural pest control: (1) control of wood-destroying organisms by any method other than fumigation, (2) control of household pests by any method other than fumigation, and (3) fumigation.

The law provides that an applicant for a license present satisfactory evidence concerning his qualifications for such license. One of the basic qualifications for a license is two years experience as an employee or owner-operator in the phase of structural pest control for which license is applied. License applicants are required to pass an oral or written examination, or both an oral and written examination before they can obtain licenses.

Information on examinations administered during this biennium is presented below:

	1970-71	1971-72
Number of persons who made application to take the examination . . . . .	48	43
Number of applicants who were refused examination . . . . .	3	2
Number of applicants who took the examination . . . . .	45	41
Number of examinations given . . . . .	160	121
Number of examinations passed . . . . .	52	43
Number of examinations failed . . . . .	108	78

Two hundred and eighty-one examinations were given during this biennium and 161 examinations were given during the last biennium. Thirty-four percent of the examinations given this biennium were passed whereas only forty-seven percent of the examinations given during the preceding biennium were passed.

### LICENSES

Structural pest control licenses are issued to the individual rather than the company. Each nonresident license holder is required by law to designate a resident agent and to maintain a complete set of records on the work he performs in this state with his agent.

A summary of licenses issued during this biennium is presented below:

	1970-71	1971-72
Number of individuals licensed . . . . .	260	276
Number of individuals to whom initial licenses were issued . . . . .	27	26
Number of companies represented . . . . .	199	202

During this biennium, 498 individuals were licensed to engage in the control of wood-destroying organisms; 471 individuals were licensed to engage in the control of household pests; and 81 individuals were licensed to engage in fumigation work. Five hundred and thirty-six licensed certificates were issued during this biennium. Twenty-three individuals failed to renew their licenses during the biennium.

### REGISTRATION

The law provides that all license holders register with this division the names of all their employees who are servicemen, salesmen, solicitors, and estimators. Each employee for whom registration is made is issued an operator's identification card. This card is to be carried on the person at all times when performing any phase of structural pest control work. The card holder is required to display his card upon demand to the person for whom any phase of structural pest control work is being performed.

One thousand seven hundred and ninety-two operator's identification cards were issued during this biennium.

## INSPECTION

This division has five structural pest control inspectors. The state is subdivided into five areas with inspectors located in Hickory, Thomasville, Raleigh, Deep Run and Williamston.

Information on inspections during this biennium is presented below:

	<i>1970-71</i>	<i>1971-72</i>
Number of inspections of chemicals. records, and equipment . . . . .	443	535
Number of samples of treated soil tested . . . . .	1,293	1,830
Number of samples deficient in toxic chemical . . . . .	123	57
Number of jobs from which samples were tested . . . . .	1,189	1,769
Number of jobs deficient in toxic chemical . . . . .	76	46
Number of licensees whose samples were deficient in toxic chemical . . . . .	43	31
Number of jobs inspected . . . . .	1,811	2,041

Major discrepancies in treatment requirements were found in nineteen percent of the jobs inspected during the 1970-71 fiscal year and fourteen percent of the jobs inspected during the 1971-72 fiscal year. Six percent of the soil samples tested during this biennium were found to be deficient in toxic chemical.

This division made a total of 8,329 inspections during this biennium.

## STRUCTURAL PEST CONTROL COMMITTEE

The Committee is authorized under the law to make such reasonable rules and regulations with regard to structural pest control as may be necessary to protect the interests, health, and safety of the public. In addition it is the duty of the Committee to conduct hearings relating to the suspension and revocation of structural pest control licenses. Fifteen structural pest control licenses have been revoked since the law was enacted.



Information on activities of the Committee during this biennium is presented below:

	1970-71	1971-72
Number of Committee meetings . . . . .	4	4
Number of public hearings . . . . .	1	0
Number of licenses revoked or suspended . . . . .	1	4
Number of licensees summoned for hearings . . . . .	7	12
Number of licensees charged re- inspection fees . . . . .	119	134
Number of re-inspection fees charged ..	484	551

During this biennium, eighteen persons were tried in the courts for violations of the North Carolina Structural Pest Control Law. Fourteen of these were convicted of engaging in or supervising structural pest control work without first securing a valid North Carolina structural pest control license.



## VETERINARY DIVISION

DR. T. F. ZWEIGART

*State Veterinarian*

The Veterinary Division is both consumer and producer oriented. Its responsibilities for controlling diseases in livestock and poultry, and assuring safe and wholesome meat and poultry for human consumption through inspection are closely related. The fact that many diseases are shared in common by man and his domesticated animals means that most animal disease control programs reduce the chances of human exposure.

Horses, dogs and cats are becoming more important in the disease control activities of the Division. Protecting the health of pet, companion, and sporting animals prevents economic and sentimental losses to owners, as well as guarding the human population against exposure to diseases of animal origin.

Most animal disease control programs are cooperative between the federal government and the various states, and between individual states. This is necessary because animal diseases spread from state to state with comparative ease unless adequate preven-

tive measures are taken. States which do not take the steps necessary to prevent the introduction and spread of animal diseases represent a threat to others and make restrictions on the movement of livestock and poultry necessary.

The work of the division, both service and regulatory, is carried out through the administration of applicable laws and regulations, and operation of the animal disease diagnostic laboratories.

#### COMPULSORY MEAT AND POULTRY INSPECTION SERVICE

The North Carolina Meat and Poultry Inspection Service was started under two laws which went into effect July 1, 1962. A new Compulsory Meat Inspection Law passed by the 1969 General Assembly became effective January 1, 1970. This law was amended by the 1971 General Assembly to bring it into compliance with Federal requirements. Consumers, livestock and poultry producers, slaughterers, and processors have benefited from the inspection. There has been a general up-grading of all slaughtering and processing establishments through new construction, remodeling, repairing and replacement of obsolete equipment to meet the minimum requirements of the State and Federal Laws and Regulations.

The Federal Wholesome Meat Act became effective December 15, 1967. It requires that State Meat Inspection standards must be equal to those of Federal inspection and North Carolina's Meat Inspection System was declared "equal to" Federal inspection early in 1971.

An agreement was signed with Federal officials on June 1, 1968 and 255 slaughtering and processing establishments were placed under State-Federal Inspection as provided for by the Wholesome Meat Act. Fifty percent (50%) of the costs for inspection service under the Wholesome Meat Act is paid by the Federal Government.

This Division has cooperated with the Federal Government under the Talmadge-Aiken Act since April 15, 1968. This involves performing Federal Meat Inspection with state employed inspectors. Meat from these plants may be shipped interstate on an equal basis with the products of federally inspected plants. Fifty percent (50%) of the inspection service costs for the plants operating under the Talmadge-Aiken Act also are paid by the Federal Government.



The Wholesome Poultry Products Act requiring all State Poultry Inspection Systems to be on an equal basis with the federal system was passed by the U. S. Congress in 1968. As a result of this requirement, a new Poultry Products Inspection Law was enacted by the North Carolina General Assembly on June 25, 1971. Our poultry inspection program was declared "equal to" the Federal Poultry Inspection Service on October 26, 1971. On December 15, 1971, North Carolina entered into a Cooperative Agreement with the Federal Government for poultry inspection under the terms of which the Federal Government agreed to support fifty percent (50%) of our poultry inspection program.

On June 29, 1972, North Carolina State officials signed a Compliance and Evaluation program agreement with the Federal Government. Federal officials will assist North Carolina in establishing this program by furnishing fifty percent (50%) of the costs. The primary purpose of the Compliance and Evaluation Program is to provide a small full-time force of investigative personnel who will be on the lookout for violations of the meat and poultry inspection laws as well as to investigate reported violations of these laws.

The Meat and Poultry Inspection Service cooperates with other state and federal agencies in order to assure the quality of meat and poultry products inspected in North Carolina.

Inspection of meat and poultry benefits the producer as well as the consumer because it is often possible to trace diseased animals from a slaughter plant to the farm of origin where the infection can be contained and eliminated.

The total number of plants under inspection as of June 30, 1972 is as follows:

<i>Wholesome Meat</i>	<i>Talmadge-Aiken</i>	<i>Poultry</i>	<i>Rabbit</i>
311	13	23	1

Following is a statistical summary of meat and poultry inspection for the biennium:

<i>Slaughtered Under State Inspection</i>	<i>1970-71</i>	<i>1971-72</i>
Hogs .....	547,165	530,083
Cattle and Calves .....	115,828	122,411
Sheep and Goats .....	1,140	876
Rabbits .....	8,303	14,581
Chickens .....	14,003,317	14,486,458
Turkeys .....	38,430	21,270

*Carcasses Condemned*

Hogs .....	1,039	1,696
Cattle and Calves .....	275	325
Sheep and Goats .....	1	1
Rabbits .....	38	66
Chickens .....	291,477	338,146
Turkeys .....	761	250

*Livers Condemned*

Hogs .....	236,647	272,437
Cattle and Calves .....	18,911	19,015
Sheep and Goats .....	210	84
Rabbits .....	309	714

*Products Processed (in pounds)*

Sausage .....	56,241,979	61,929,480
Hamburger .....	18,256,545	24,486,050
Steaks, Chops, Roasts .....	15,258,615	17,230,901
Placed in Cure, Cooked, Smoked, Hams, Sides, Barbecue and other ....	39,209,953	33,287,765
Cheese, Chili, Loaf and other .....	9,890,421	11,048,483
Sliced Bacon, Beef and other .....	5,891,365	5,294,550
Lard .....	3,625,864	3,294,770
Miscellaneous .....	43,829,502	46,054,350
Canned Product — Commercial .....	622,350	—0—
Poultry .....	7,811,334	25,192,007
Rabbits .....	43,161	61,470

## HOG CHOLERA

As the biennium ended the amount of hog cholera reported in the state had dropped to one case for June in Johnston County. Despite extensive search, there was no evidence that any more of the disease existed in North Carolina. Apparently this ended the series of outbreaks which occurred in Johnston, Hoke, Moore, Greene and Robeson Counties starting in early March, 1972 following the illegal movement of infected swine through two livestock markets in February. Ten outbreaks occurred during Fiscal Year 1971-72 — all in the last four months. The source of the infection has not been determined, but it is thought to have been introduced from outside the state by the livestock dealer who sold the infected swine at the markets.

Prior to March 1, 1972, North Carolina had gone nine months with no hog cholera reported. The on-the-farm inspection system (staffed largely by agriculture teachers and extension personnel)

which had been in effect since August 18, 1969, was discontinued December 31, 1971. Unfortunately, the renewed outbreaks made it necessary to restrict the movement of non-slaughter swine until April 3, 1972, when the inspection system was reinstituted.

One hundred twenty-five outbreaks occurred during Fiscal Year 1970-71. Most of these were concentrated from July through October, 1970, in the northeastern counties of the state. The last of these counties was released from State-Federal quarantine on November 20, 1970.

The cost to the state for hog cholera indemnities during the biennium was \$926,035.95. The federal government's share during the same period was \$1,154,869.00.

More outbreaks of hog cholera are always possible as long as a source of infection remains in North Carolina or other states. However, there are a number of factors which make the occurrence of further major outbreaks less likely. The disease is now known to exist in only a few states. A major effort is being made to eradicate these possible sources for future infections of other swine. Having the disease localized to a few areas allows the State and Federal Governments to concentrate their resources on the problem more effectively. The Federal Government's action on September 8, 1970, which stopped the slaughter for food of all swine which had been exposed to hog cholera, has greatly reduced the risk of hog cholera being spread by feeding garbage containing raw or improperly cooked pork scraps to swine. Formerly, this was a very important avenue for the spread of hog cholera within and between states. Forty-five states were classified as hog cholera-free as of June 30, 1972.

As opposed to several years ago, few people now doubt that hog cholera can be eradicated. With continued effort, it is just a matter of time until the disease is eliminated as a constant threat to our swine industry. The big task is to see that we do not allow the absence of hog cholera to breed complacency which would allow it to become reestablished.

The cost of hog cholera eradication will be high, but the reduction of losses from the disease itself, and the opening up of new markets for our swine and pork products will make the expense well worthwhile.



## TUBERCULOSIS

The incidence of tuberculosis in the cattle of North Carolina is at a low point. During the biennium 89,859 cattle in 1,938 herds were tested and 25 reactors involving 7 herds were found. The improved ability to identify slaughter cattle back to the farm of origin has enabled us to reduce the amount of testing of individual herds. The cooperation of cattle owners, market operators, packing plant managers, and state and federal meat inspection personnel enables us to trace cattle showing evidence of tuberculosis at slaughter and concentrate on clearing up infected herds. Because of the insidious nature of tuberculosis, final eradication will of necessity be a long, slow process. The low incidence of the disease, and the slowness of seeing results, tend to lead to complacency on the part of the public and those involved directly in the program. This is one of the biggest problems associated with animal disease eradication programs.

A recent change in federal meat inspection regulations has caused a renewed interest in eradicating tuberculosis in swine. The new regulations require heat processing of many carcasses which formerly were passed for food. Our problem is to locate infected herds, remove infected animals, and prevent infection of those remaining. Unfortunately, the test available for diagnosing tuberculosis in living swine is not highly satisfactory. It does not identify all infected animals. Hopefully, research already underway, and that which is contemplated, will provide enough information to make a swine tuberculosis eradication program feasible.

A highly accurate test, identification back to the farm of origin of swine sold for slaughter, and a program to indemnify owners of swine for losses due to tuberculosis would simplify eradication of this disease.

Swine tuberculosis is not caused by the same organisms ordinarily associated with the disease in humans and cattle. The avian type tuberculosis organism is responsible for some outbreaks of the disease in swine, but bacilli of the Runyon Group III are involved in an unknown percentage of cases.

## BRUCELLOSIS

Brucellosis is an infectious disease which affects most species of livestock, and may be transmitted to humans as undulant fever. A national State-Federal Brucellosis Eradication Program was started in 1934 and is expected to be completed by 1975. North

Carolina was declared brucellosis-free for the disease in cattle on March 29, 1971. Much of the success of the program is attributable to improved methods for detecting infected herds. Identification of slaughter cattle at the first point of concentration after they leave the farm makes it possible to collect blood samples, identifiable back to the farm, at the time of slaughter for testing. Use of the brucellosis ring test every three months on bulk milk has made it economical to screen large numbers of dairy animals for brucellosis. The two screening methods have almost eliminated the necessity for "down the road" testing.

Swine brucellosis is caused by an organism which is closely related to the one producing the disease in cattle. Routine testing of swine with the payment of indemnities for reactors to the test has not been practiced as with cattle. For this reason, the program to eradicate the disease in swine is not as far advanced.

Recent developments have given some degree of urgency to carrying out a program for elimination of the infection in swine. Because of undulant fever being contracted by packing house workers from infected hogs, animal health authorities in one state



Governor Scott received the "Brucellosis Free" certificate from Dr. E. E. Saulman of USDA.



have served notice that no swine for any purpose, including slaughter, will be allowed to enter after January 1, 1973, unless they originate in a validated brucellosis-free herd or area. There are indications that other states will take a similar stand in the near future. Members of our swine industry will be affected adversely if we do not meet the requirements.

We are hopeful that a recently introduced tattooing method for identifying slaughter swine back to the farm of origin will enable us to locate infected herds with a minimum of expensive herd testing. An indemnity program for infected breeding animals would make a swine brucellosis program more acceptable to owners of infected herds.

#### ANAPLASMOSIS

Anaplasmosis is an infectious disease of cattle transmitted by ticks, biting flies and other insects, as well as by the use of contaminated needles, dehorner, etc. Reliable blood tests and treatments for the disease are available, so it is possible to rid a herd of anaplasmosis by testing all cattle in the herd, and treating those which are shown by a test to be infected carriers of the disease.

A voluntary anaplasmosis control program is available to cattle owners. Losses due directly to the disease, and increasing restrictions on the movement of cattle into other states and countries make it worthwhile for owners to establish anaplasmosis-free herds.

#### VENEZUELAN EQUINE ENCEPHALOMYELITIS (VEE)

VEE is a highly fatal viral disease of horses transmitted mainly by mosquitoes. Humans also are susceptible. It has not occurred in North Carolina, but did pose a threat to the state's horses during the summer and fall of 1971 after it had been introduced into Texas from Mexico during July, 1971. In order to prevent its spread into the state, North Carolina participated in a massive state-federal cooperative VEE vaccination program. More than 90% of the estimated 133,000 horses, mules and ponies located in North Carolina were vaccinated. VEE is no longer known to be present in the United States, but there is a possibility that it has become established in Texas wildlife. Introduction of the disease into North Carolina could occur with no warning. For this reason, owners have been urged to be sure that all of their horses have been vaccinated.



## NEWCASTLE DISEASE

Newcastle disease is a highly contagious malady of all fowl, including pet and wild birds. In its common form, it has been familiar to the poultrymen of North Carolina for many years. Its presence in the state has resulted in routine newcastle disease vaccination programs being undertaken, but has not posed a serious threat to the existence of the industry.

During the biennium, an especially virulent strain of the disease was introduced from outside the United States with shipments of exotic birds. It has been referred to as exotic, velogenic, viscerotropic or asiatic newcastle disease. It causes a very high mortality in affected domestic poultry. Vaccines available produce some immunity when used properly, but repeated vaccination is required.

Several states have had affected flocks and one has suffered great losses from the disease. The introduction of velogenic newcastle disease into North Carolina would create severe economic problems for the poultry industry. North Carolina Animal Disease Control officials are working cooperatively with federal officials to keep the disease from spreading to this state.

## OTHER DISEASES

Foot and mouth disease has not occurred in the United States since 1929, but the recent experience of other countries shows that we can not relax our vigilance. Vesicular stomatitis which is readily confused with foot and mouth disease does occur in North Carolina. While vesicular stomatitis is not a great threat to our livestock industry, every reported outbreak must be investigated because of the similarity.

Virus pneumonia and atrophic rhinitis of swine cause sizeable losses to swine producers of the state although they kill relatively few animals. Unfortunately, it is not possible to detect the diseases with a high degree of certainty in living animals. For this reason, it is difficult, though possible, to develop and maintain noninfected herds. It is especially important that owners selling breeding stock have disease-free herds. Personnel of the Veterinary Division are working with interested owners to accomplish this objective.

Infectious bovine rhinotracheitis (Red nose), virus diarrhea and a respiratory disease caused by a parainfluenza virus have caused sizeable losses to dairy and beef cattle owners of the state. Diagnosis of these diseases is difficult without laboratory help.

The division's diagnostic laboratories fill this need. Fortunately, effective vaccines are available to prevent these diseases.

### POULTRY TESTING

Poultry Specialists of the division are responsible for licensing hatcheries and baby chick dealers, and regulating their operations. They, or authorized agents working under their supervision, conduct pullorum-typhoid tests on hatchery flocks as required by law. The plate agglutination test is used on most flocks and is done in the poultry house. The tube agglutination test (which is performed at one of the division's diagnostic laboratories) is used on primary breeding flocks and on all turkey flocks. No reactors to the test for pullorum-typhoid disease were found during the biennium. Based on this progress toward eradication of the disease, the test requirements were modified, except for primary breeders, to call for the testing of 10% of the birds in a flock, with a minimum number of 200 instead of the entire flock. This releases field and laboratory personnel for work with other disease problems.

The mycoplasmosis (PPLO) control program initiated in 1967 has continued to expand. Much progress has been made in removing the infection from chicken and turkey flocks. Present indications are that an eradication program for diseases of poultry caused by mycoplasma will be feasible.

### ANIMAL DISEASE DIAGNOSTIC LABORATORIES

Nine animal disease diagnostic laboratories are operated by personnel of the division. The central laboratory, formerly located in a building on the N. C. State University Campus was moved into a new building located on Blue Ridge Road at the intersection of Reedy Creek Road in March of 1972. It has been named the Rollins Animal Disease Diagnostic Laboratory. Small branch laboratories are located at Edenton, Monroe, Murphy, North Wilkesboro, Robbins, Rose Hill, Shelby and Waynesville. The branch laboratory at Edenton is staffed and equipped to diagnose diseases of livestock and poultry. Work at the other branch laboratories is limited essentially to the diagnosis of poultry diseases.

The central laboratory is staffed and equipped for the diagnosis of diseases of all species of livestock, poultry, and common pets, as well as fish. In addition, specimens are sent to the central laboratory from the branch laboratories whenever other than relatively simple tests or procedures are required. These include

histological examination, fluorescence microscopy, virus isolations, serum neutralization tests and chemical analyses. When information about flocks or herds is needed to supplement laboratory findings, visits to farms are made by staff veterinarians.

Funds for building a new animal disease diagnostic laboratory in western North Carolina were approved by the 1969 and 1971 legislatures. It is expected that the new laboratory to be built at the Asheville Agricultural Center near the airport will be ready for occupancy about January, 1974. It is planned to staff and equip this new laboratory to render a complete animal disease diagnostic service. The area is now without laboratory diagnostic service for livestock owners, and that available to poultry producers must be supplemented by service from the Raleigh laboratory. This often causes unacceptable delay.

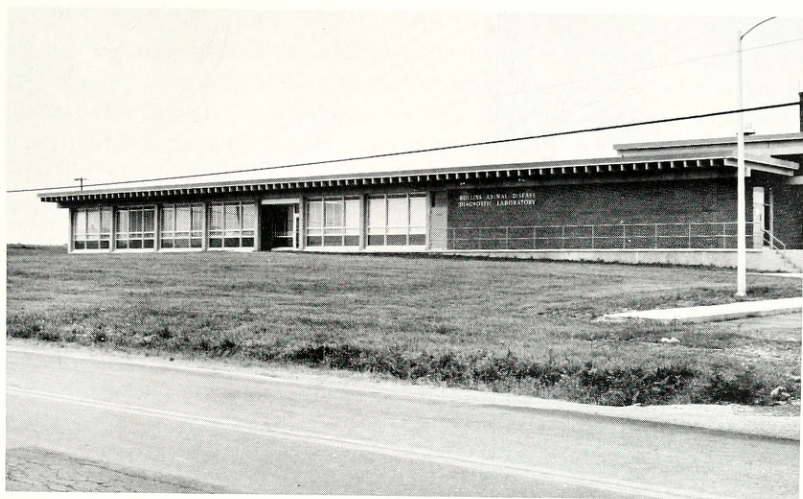
#### LIVESTOCK MARKET INSPECTION

Public livestock markets are beneficial to the livestock industry of the state, but without proper attention to disease control they can cause great losses by contributing to the spread of animal diseases. Recent experience with hog cholera shows that we can not relax our guard in this respect.

Public livestock market inspection is an important part of the work of the Veterinary Division in that it contributes to reducing losses to the livestock industry due to animal diseases. Inspectors from the division have the responsibility for seeing that the state's livestock markets are operated in accordance with applicable laws and regulations. Inspections are made to insure minimum standards for sanitation are met, sick animals are not offered for sale, and required tests are performed. Testing at livestock markets is performed by practicing veterinarians employed by livestock market operators, or veterinarians or livestock inspectors employed by the Veterinary Division.

Most livestock market operators recognize the importance of conducting their markets in such a manner as to minimize the chance of disease spread. With few exceptions, they have worked with representatives of the Division to lessen the possibility of disease spread through their markets. Their support in identifying cattle back to the farm by backtagging has been especially helpful in locating diseased herds.





**Rollins Animal Disease Diagnostic Laboratory.**



## WEIGHTS AND MEASURES

JOHN I. MOORE

*Superintendent*

Long before the words "Consumer Protection" became a household word, the Weights and Measures Division of the North Carolina Department of Agriculture was furnishing consumer protection to each and every individual citizen of this State. This statement is based on the fact that there is no trade, borrow, or exchange of any product or item but which Weights and Measures has not been involved in this some way or another. The Weights and Measures Laws of this State established by the General Statutes adopted various standards to which every person must adhere. In carrying out the mandates of our Law and offered to all citizens of this State, our Inspectors go into various wholesale and retail establishments throughout the State and inspect the various types of merchandise being offered for sale, and sold, and to see that they have the correct net contents as stated on the package in a conspicuous and prominent manner. Our Inspectors also test all types of weights and measuring devices which are used in determining either weight, measures, or length to see that they are accurate.

There are three heavy-duty scale test trucks which carry a total gross weight of 4400 pounds which check the large motor truck type scales located throughout the State. There is one heavy duty test truck which is assigned to the ever increasing number of livestock markets or hog buying station which are located throughout the State. These scales are tested at least twice each year or more often.

There is a continuous increase in the use of our new Weights and Measures Laboratory where all types of weights and measuring devices can be tested, calibrated, sealed, and certified as to their accuracy with certification being made which are identical to the National Bureau of Standards' standard weights. The use of this Laboratory by industries has resulted in a tremendous savings to those taking advantage as they get immediate service. This Division also administers the Scale Mechanic Act which protects the user of scales from fraud practices of scale mechanics.

We also enforce the Public Weighmaster Act, which requires that all tobacco weighed in tobacco warehouses be weighed by licensed weighmasters and that all livestock sold in public livestock markets also be weighed by licensed weighmasters. In tobacco warehouses these inspections assure the farmer of having obtained correct weight this being done by the Inspectors going into various warehouses and picking at random baskets or bundles of tobacco and returning same to the scales for verification of the weight.

The awareness of the consumer of Consumer Protection has recently increased the complaints which this Division receives, and we give special attention to such complaints by investigating each one. In the majority of the instances, we are able to give the consumer relief if he has been mistreated.

July, 1972 - June, 1974

## **GASOLINE AND OIL INSPECTION**

JOHN I. MOORE

*Director*

The Gasoline and Oil Inspection Division of the North Carolina Department of Agriculture continues to render a consumer service being able to assure the public of this state that the quantity of



petroleum products purchased are accurate and that they are of excellent quality. The General Statutes of this state assign these duties to this Division, and the objective is carried out by inspectors who are stationed throughout the state who check the dispensing devices at service stations at least twice a year to make sure they deliver the quantity indicated by the device. There are also twelve portable laboratories which are located throughout the state who in their area go to random service stations picking up various different brands of gasoline and run an analysis of the product to determine if it meets the specifications required of the different products. In addition to this activity, they also one day a week pick up samples of various brands which are sent to our Central Laboratory where eight various chemical analyses are run. These analyses assure the citizens of this state that they are getting the very best petroleum products available anywhere.

Because of recent action taken by the Environmental Protection Agencies of Federal Government which claim that the emission of gases from automobiles are dangerous to the health, we find it necessary to review our quality specifications and will soon adopt new specifications which will require that the products sold in this state meet the requirements of the Environmental Protection Agencies. This will be costly to everyone involved.

There continues to be an increase in the use of liquefied petroleum gas both by domestic and industrial users. The various industries have found it necessary to install "Stand-By" LP-gas plants to enable them to continue to operate with this product when natural gas which they normally use is not available because of a shortage of this product. A consumer service relating to this product is the assignment of four inspection personnel who enforce the law as to the accuracy of the devices for measuring and for the safety of handling and storage and use of this product which is of a hazardous nature unless handled in a safe manner as required by law.

July, 1972 - June, 1974







